The Golden Hands Encyclopedia of

CRAFTS

The complete guide to
traditional and modern home crafts

Volume 3

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Marshall Cavendish

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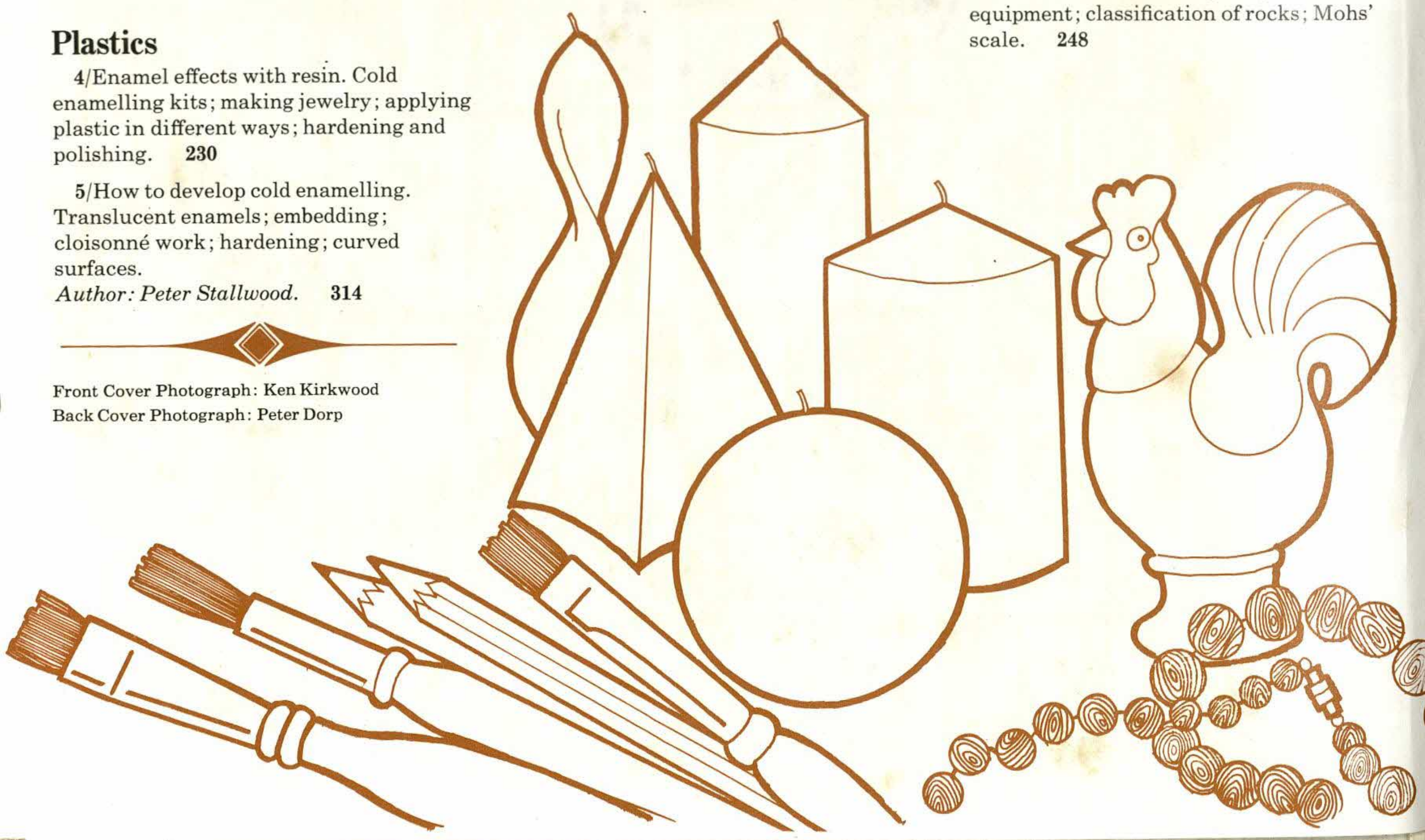

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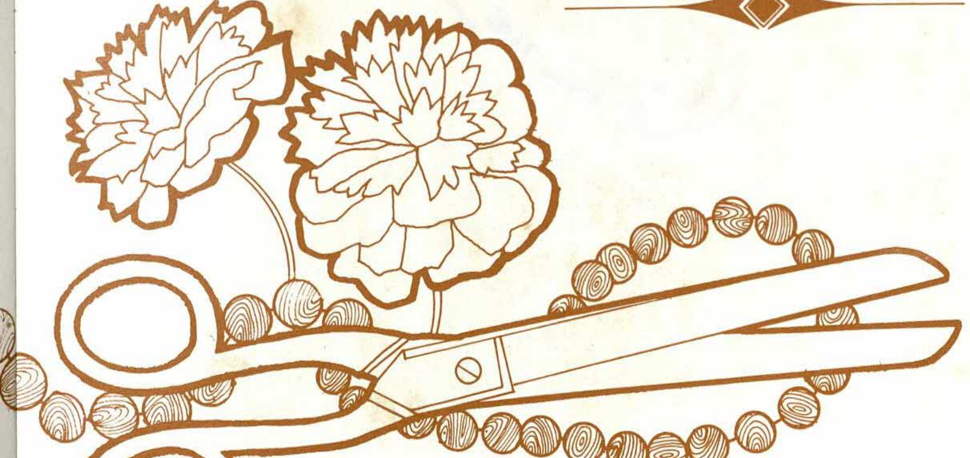

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Creative ideas 11. Chipwood reels and wooden beads at Hobby Horse, 15 Langton St, London SW10 (both mail order and personal shoppers).
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Glass 2. Glass cutter and tapper at A. T. Lee & Co, PO Box 530, Chester St, London SW1X 7BH. For a useful and practical book on bottle cutting see *The Craft of Bottle Cutting*, published and written by A. T. Lee and obtainable from above address.
Clay 6. Self-hardening clays—Cold-Clay (this can be fired too) at Fulham Pottery, 210 New Kings Rd, London SW6: for nearest Das stockist write to Wiggins Teape (Toys & Crafts) Ltd, Hubert Rd, Brentwood, Essex.
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Pin art 3. Cotton panel pin at ironmongers. Twilleys Goldfingering at The Needlewoman Shop, (see embroidery).
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Metrication
In this volume you will find two systems of measurement. The first set of figures refers to the metric system and the Imperial figures follow in brackets. Wherever possible, a commonsense approach has been adopted and both sets of measurements have been worked out in round numbers. **BUT BEWARE!** This means that metric and the Imperial figures are *not* equivalent so make sure you only work with one or other set of figures.

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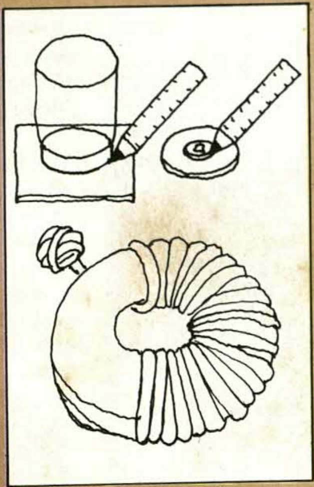
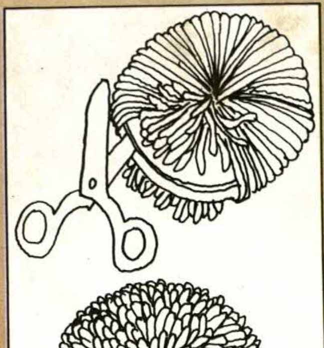
Creative ideas 8

Making pompons

Pompons are as easy to make as they are fun to use. Dress up last year's cardigan with a few made in brightly coloured yarns or else make them into little animals like these nice mice—if you give the mouse heart-shaped ears he makes a very special valentine.





Simple steps for making pompons: making cardboard circles; winding wool round rings; cutting wool; trimming to shape.

To make a mouse

You will need:

12½gm (½oz) of wool.

Cardboard and scissors.

Seed beads for eyes and felt for ears.

Cut two circles with a 5cm (2″) diameter from the cardboard. From the centre of each circle cut out a smaller circle: the larger this inner circle, the more wool you will need to complete the pompon. If you don't have a compass to help you draw the circle, a small wine glass will do for the outer circle and a coin for the inner circle.

Cut several strands of yarn the same length, place the cardboard circles together and begin to wind the yarn around the frame as evenly as possible. Keep the cut ends of yarn to the outer edge of the cardboard.

When the centre hole is almost filled and you can't push the yarn through with your finger, thread the yarn into a blunt-pointed needle and continue until the hole is completely filled. The better filled the hole is, the fatter and rounder the pompon will be.

When you have completed this phase, begin to cut the strands of yarn at the outside edge. Use sharp scissors and only cut a few strands at a time. Do not pull on the loops as you cut or you will pull the strands out of shape.

When all the strands are cut begin to open the cardboard rings, using the tips of the scissors.

When you have exposed the centre, tie it around with string and make a strong knot. When this is done, snip carefully through the cardboard rings and remove the cardboard.

Now make another pompon for the head. You can use the same rings by taping up the slit you cut.

Thread a darning needle with a long piece of yarn. Make a large knot in one end and draw this through the centre of each pompon to pull them together. Trim head to shape, being careful not to cut the tying string, and tidy up, trimming away long ends.

To make the ears, cut a heart shape from felt, make a slit from the bottom point to the middle and slip the ears between the head and body. Sew on seed beads for eyes and nose.

An idea for using scraps of wool creatively—pompon mice are great fun to make.

Alastair Ogilvie

Paper 8

Cutting simple stencils

Stencilling has been successfully used to decorate everything from manuscripts and fabrics to walls and floors, more or less since the beginning of civilized history.

Janet Waring, in her fine book 'Early American Stencils on Walls and Furniture', says that the English term 'stencil' probably comes from the Old French *estanceler*—to cover with stars—because in early churches, walls and ceilings were often painted blue and then gold stars were stencilled all over them.

The craft of stencilling was brought to a fine art in New England at the end of the 18th century and beginning of the 19th century.

Stencils are a quick and easy way of reproducing patterns by hand and can be used to give an individual touch to most homes or to create original, personal greetings cards, letter headings or (using fabric dyes) to hand-print lengths of material for clothes.

Stencilling isn't a difficult craft to learn, though it needs care and thought in the preparation stages.

Stencil paper

Thick stencil paper, especially treated to withstand repeated applications of paint, can be bought from art supply shops but there are cheaper alternatives. In 18th-century America, a great deal of decorative stencilling took the place of wallpaper and floor coverings. The craftsmen used leather stencils or, more often, heavy paper stiffened with oil and paint, with a bevelled edge to ensure a sharp outline.

Modern stencillists can use heavy brown paper coated with lacquer, thick aluminium foil, or cardboard, rendered non-porous by the use of a commercial sealer, PVA glue or several coats of varnish. If you are only going to make one or two stencils, you can use thick, untreated cardboard, though this will not last for much longer than two impressions.

You can also use thick acetate film. Because this is transparent, it can be placed over the pattern and cut without first tracing, which is a great time saver.

Beginners are advised to use stencil paper or thick acetate film.

Tools

Cutting tools. Depending on the material which you are using, you will need either a light scalpel or a heavy-duty trimming knife. Both are available from craft shops and have removable, replaceable blades.

These blades are all lethally sharp and have to be used with great care. Always keep them away from children.

The scalpel has a thin, flexible, usually very pointed blade which is quite difficult to change and which should be stuck into a rubber when not being used.

The heavy-duty trimming knife has a standard blade for general cutting but for cutting card and paper you need a blade with a sharp edge that points downwards. You can buy a blade for lino cutting—an angled blade for slitting and trimming and a convex blade for scoring and cutting.

One very good type of cutting tool has a long, multi-edged blade, the tip of which can be snapped off when it has become blunt.

Metal ruler. Another tool needed is a metal ruler for cutting straight lines—a wooden edge soon becomes chipped and therefore inaccurate, and you should in any case cut straight lines against a metal rule or the cutting tool may slide off and cut you.

Tracing paper to transfer designs on to the stencil paper.

A wooden board to cut on.

Stencil brush. This should be a round one with a flat-cut surface but not too big because, if it is, it will hold too much paint which will seep under the stencil edges. Clean brushes well after use.

To make a stencil

Before starting work, make sure the working surface is firm. Tape the cutting board to a table, then tape the stencil paper to the board. Then you can begin to cut.

When cutting any stencil, make sure that the outside edges of the stencil are square and even, as this will help with

Keith Morris

With stencils it is easy to reproduce original designs on most surfaces.

the spacing and placing if you want to repeat your pattern over a large area.

How to cut straight lines. Place the metal ruler along the line you wish to cut. Hold the ruler firmly in place with one hand, keeping fingers well out of the path of the knife. Hold the knife in the other hand, either like a pencil or a table knife, whichever is the most comfortable.

Keeping your arm rigid, draw the knife against the ruler without angling the blade but keeping it absolutely straight on the line, leaning down on the knife and drawing it backwards towards you. Don't try to cut right through all in one go but cut lightly at first, then more and more firmly until the line is cut through. It is usually easier to cut a long line a little at a time.

Cutting circles and curves. Again, never angle the knife to the left or right but lean it backwards towards you. Hold the paper firmly, keeping the fingers well away from the path of the blade. Untape the paper from the board, cut a little of the stencil at a time, then turn the paper and cut a little more until the circle or curve is complete.

Planning designs for stencils

Except on thin paper or on card that is being used, perhaps, for one or two repeats, even the sharpest knife will have difficulty in cutting very intricate designs, so keep your stencil patterns simple to begin with.

When cutting out a shape of any kind from a stencil, it must be attached to the outside border of the design or the cut shape will simply fall out.

There are two ways of attaching the shape. Either leave linking tags (or stays) attached to the outside border (fig.1), or make the shape large enough

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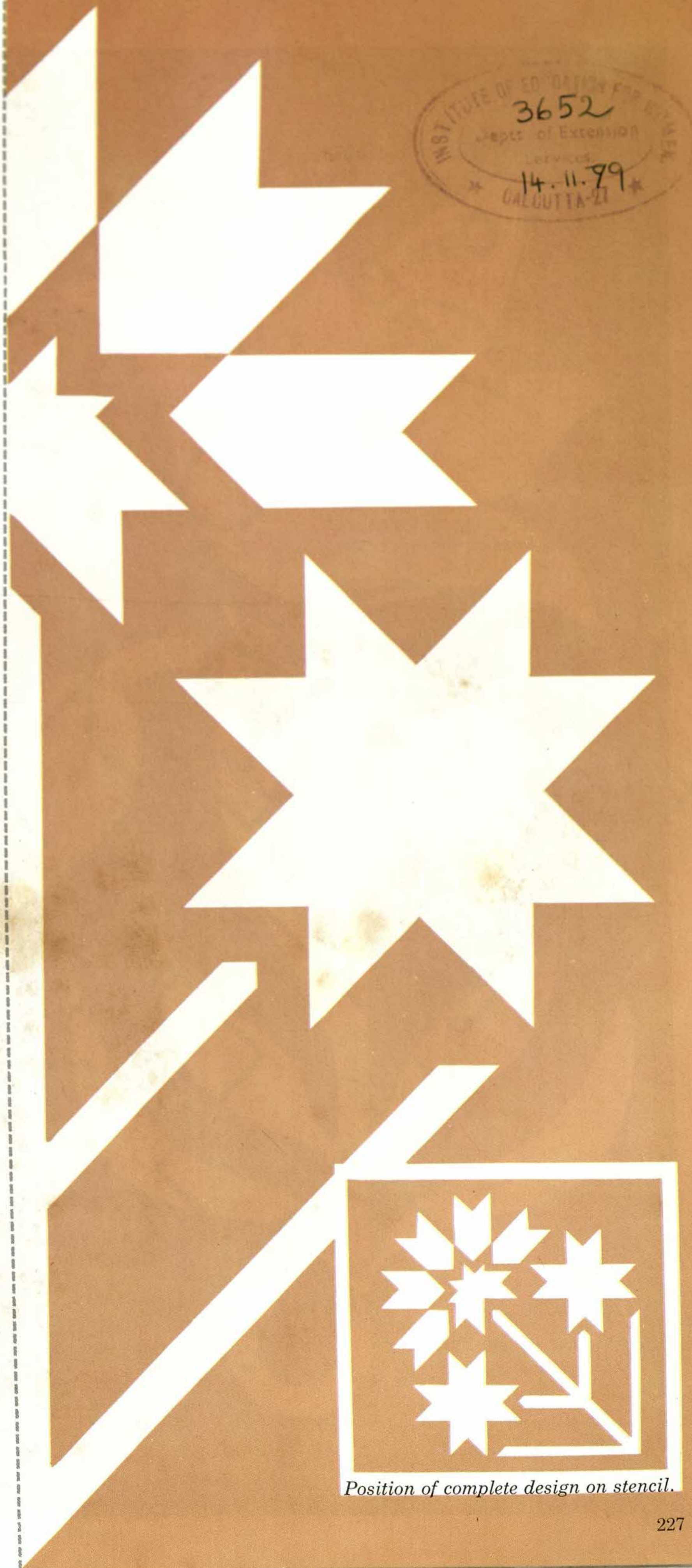
1. *Victorian design with linking tags.*



Position of complete design on stencil.

Originally based on a piece of patchwork, this abstract flower design is ideal for a repeat pattern (see page 242). Stencils designed by Joanna Ball.

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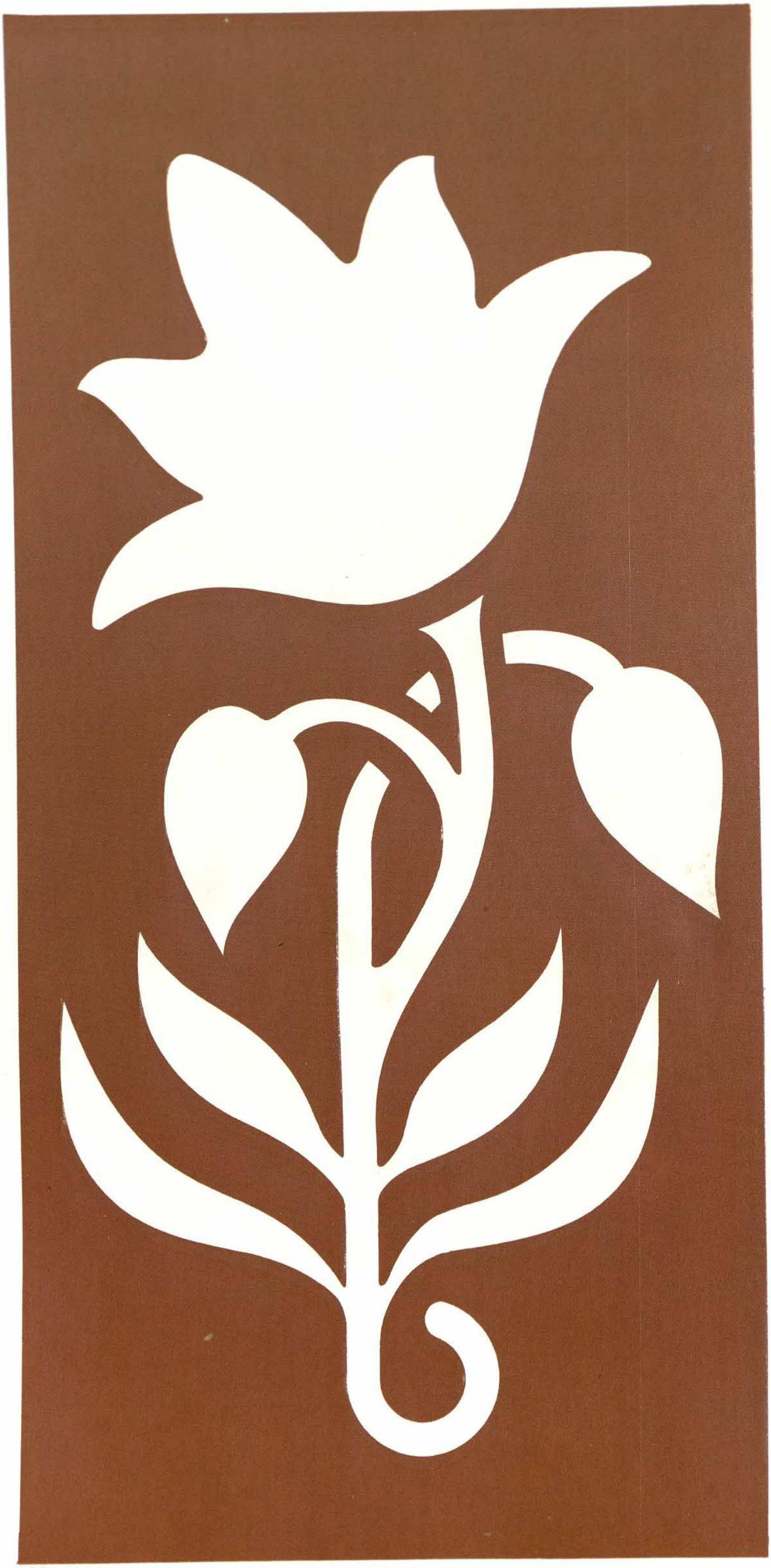
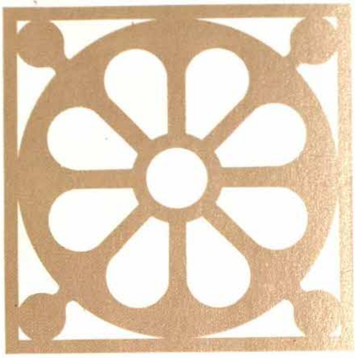
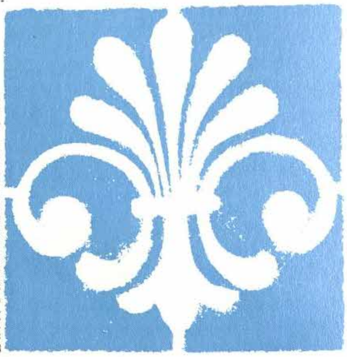


to touch the frame at various points, which will hold it in place (fig.2).


Mike Rose

2. *Design touching the frame.*

Stencils can either be negative—ie the background is cut away to form the design (fig.3) or positive, when the actual design is cut away (fig.4).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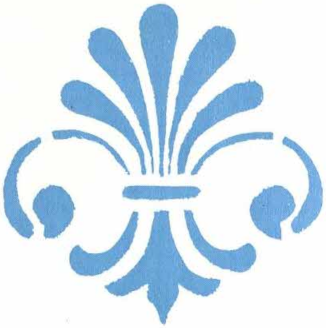
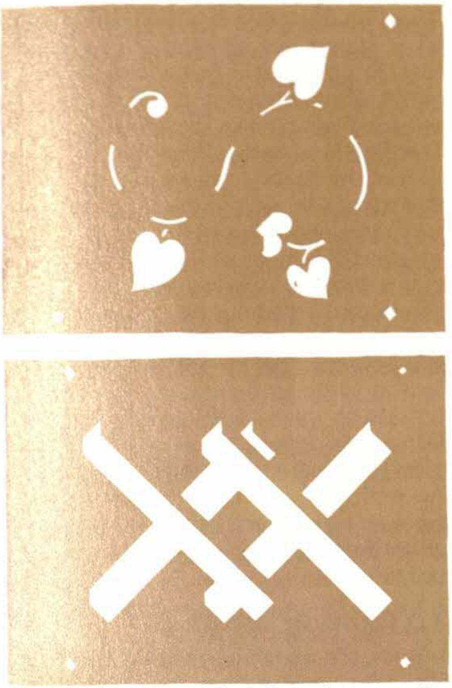
3. *Result of negative stencil.*



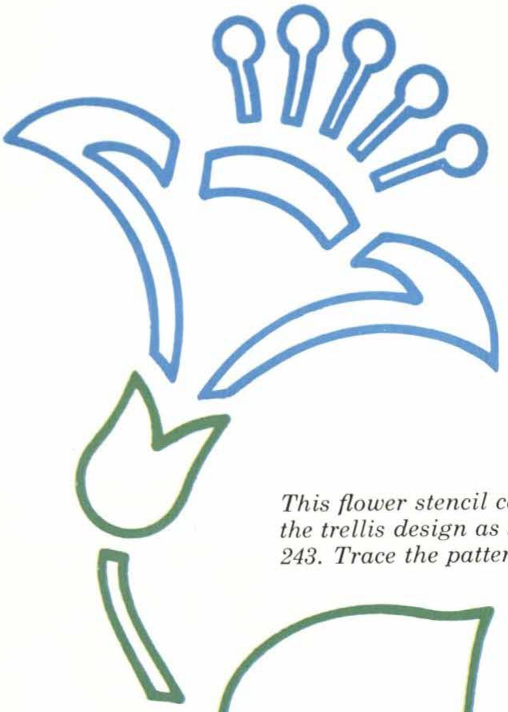
4. *Result of positive stencil.*

So from one design you can get two completely different-looking stencils. Stencil patterns can also be varied by colouring different areas in different colours, adding strong colour on top of pale colours at a later stage.
It is also possible to cut two-part stencils that fit on top of each other, so that first one colour is printed and, when that is dry, another design in another colour is placed on top. When doing this, cut register marks (fig.5) on both stencils so the designs will fit accurately over each other.

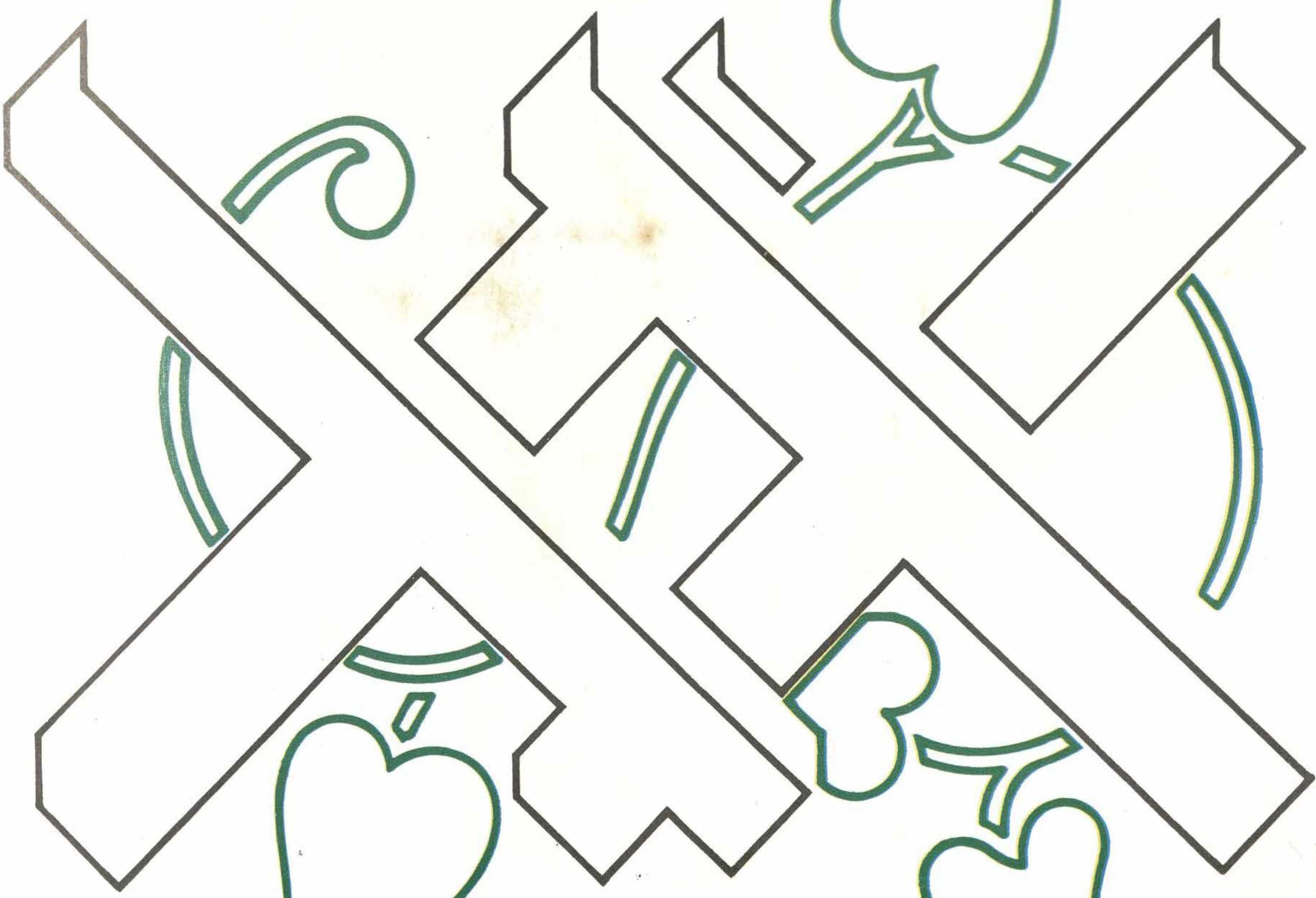
On page 241 you can see this charming pattern stencilled on a trunk. It would look equally attractive on fabric.



5. *Two-part stencil with register marks.*



This flower stencil can be used with the trellis design as shown on page 243. Trace the patterns given here.



Trevor Lawrence

Enamel effects with resin

Plastics 4

Fine enamelling can only be done on objects that can withstand the heat that is essential to the process. Modern developments, however, mean that the effect of enamelling can be applied to wood, paper or plastics that would not survive being heated in a kiln, as well as metals and glass. Cold enamelling, as the process is called, can be used on almost any surface.

The basis of cold enamelling is a cold-setting liquid plastic. To this, in its liquid form, various pigments are added for colouring: these can be opaque or translucent and other special effects are available, such as metallic and fluorescent colours.

The plastic, which comes in two parts, is mixed first, then the colouring is added and the liquid is applied to the surface and left to dry.

There are introductory kits available for cold enamelling. These typically include the two-part plastic, a variety of pigments, metal blanks and findings for making brooches, pendants, cuff-links and ear-rings. They also include tin-foil dishes for mixing, mixing sticks, measuring beaker, spoon, brush and cleaning fluid, as well as the manufacturer's instructions. Once you've used a kit, however, you will want to buy particular materials separately as you need them: there's no point in paying twice for packaging and measuring beakers!

Instead of cold enamelling materials clear-cast resin can be used, but the amount of recommended catalyst should be increased to cure the surface.

Preparations

Before embarking on cold enamelling, prepare your work area by covering it with protective layers of newspaper or plastic sheeting. The liquid plastic is designed to adhere firmly to the surface on to which it is applied—and this will apply equally to your best carpet! It can be removed while it is still in liquid form but it is best to avoid the problem.

The liquid plastic has a slight odour. This is not unpleasant but it is advisable to have some ventilation. A warm, dust-free room gives the best working conditions. The warmth helps the finished enamelling to set more quickly and the less dust there is in the atmosphere, the higher the gloss on the finished piece will be.

Be careful not to confuse the two separate containers which hold the liquid plastic and the hardener—when the two liquids are mixed, they set into solid plastic. So, if you put the wrong top on the containers, you may never be able to open them again. The containers are made to be distinctive to guard against this possibility.

As with all crafts, a beginner is advised to experiment initially with small quantities, using card or other scrap material.

To enamel findings

It's a good idea to start with jewelry blanks, since they are small and have a suitable surface.

You will need:

Liquid plastic for cold enamelling.
Hardener.
Small measuring jug or old teaspoon.
Foil dishes for mixing.
Pigments.
Mixing stick or toothpick.
Paintbrush (optional).
Jewelry metal blanks.

Preparing the plastic

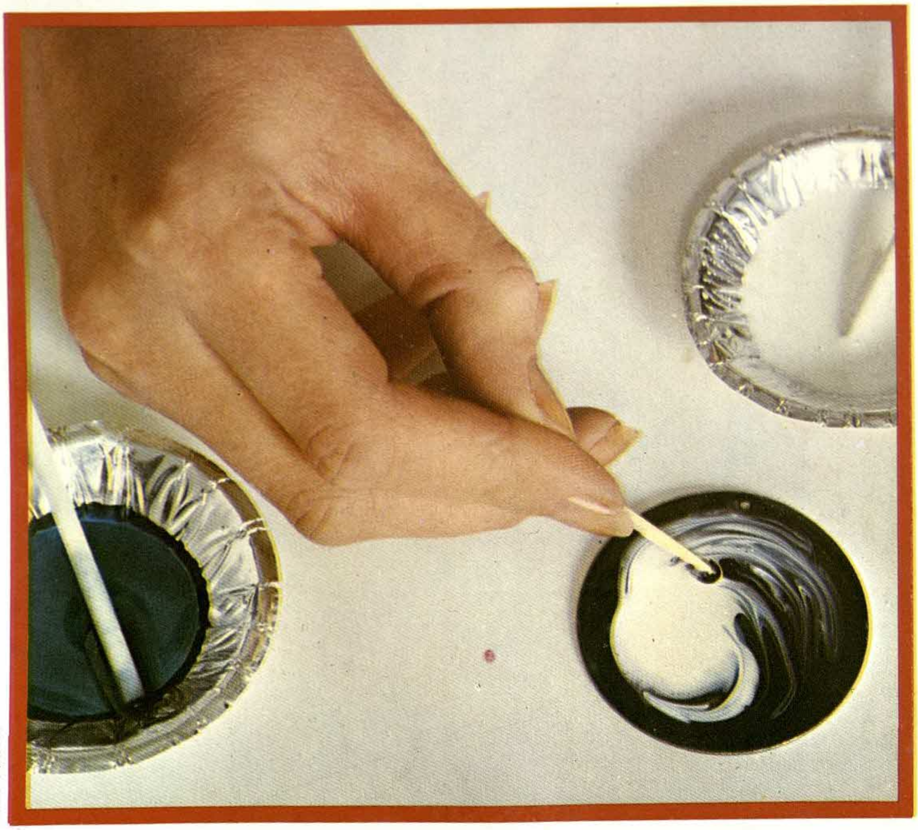
Pour 10ml (2 teaspoons) of liquid plastic and 5ml (1 teaspoon) of the hardener into the measuring jug. This amount will do for your first attempts; later, judge for yourself how much you will need, but always use the proportion of two parts plastic to one part hardener. Mix the liquid thoroughly together and pour it into two or more of the foil dishes.

Add a different colour to each dish, mixing the colours thoroughly into the liquid as you add them. Use as little pigment as possible, since too much will cause the plastic to take longer to set. For best results, you will need to use rather more of the opaque colours than the translucent ones.

It takes very little practice to judge how much pigment you need. Make sure that the solution is coloured evenly. The mixed solutions will remain workable for between two and three hours at normal room temperature.

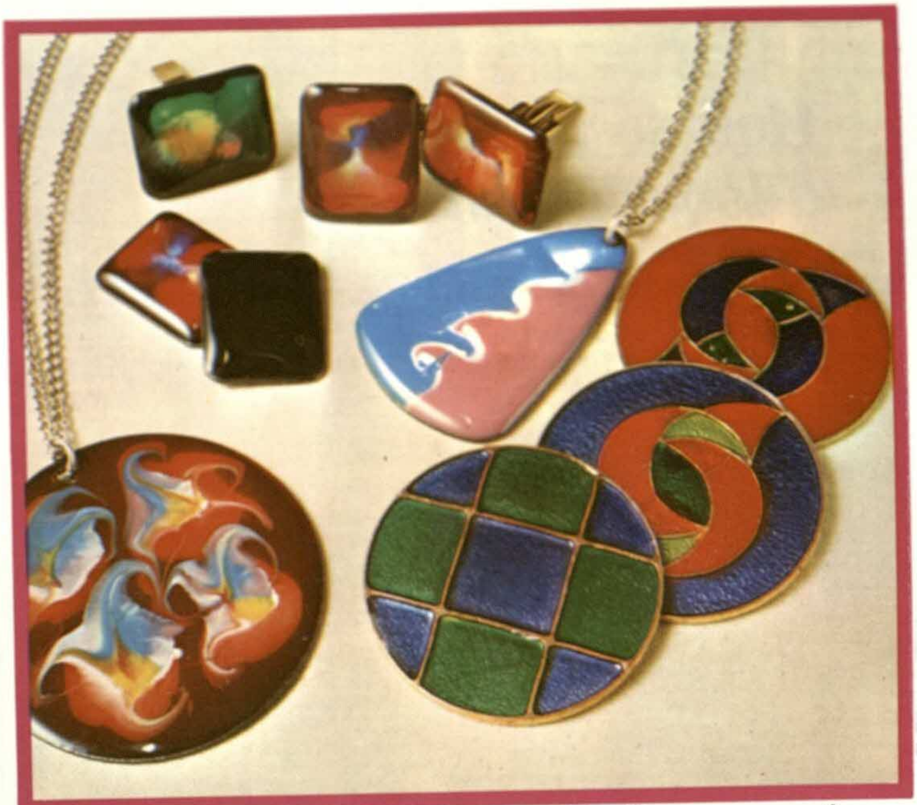
Applying the plastic

There are two basic techniques for using the cold enamel solutions—you can mix two or more colours in a liquid



Keith Morris

To give the enamel a 'scrolled' look draw a toothpick through it.



Dick Miller

Some of the things you can easily decorate with cold enamel are shown here. If you are decorating a pair of cuff-links, for example, with the random technique, they do not turn out identical, but that's part of their charm —so long as you use colours carefully to give an impression of matching.

state or allow one colour to set hard before adding subsequent layers. The first technique requires careful choice of colours and some skill but there is an element of chance in the way in which the colours swirl together which can be most pleasing.

Mixing liquid colours. Select the background colour and apply this over the whole area to be enamelled, using a small paintbrush or mixing stick. Next, drip a small amount of a second colour on to the still liquid base and watch how the two colours run together. For a more varied effect follow this with a third colour. But beware of using too many different colours as they may clash or give too cluttered a design.

A further interesting variation can be achieved by running a toothpick or needle through the pattern, which often produces an attractive, swirling effect. A little experimentation will show you how to mix the colours and how much they tend to run into each other.

Hardening between layers. By allowing one coat to set hard before applying another, you can achieve full control of the colours you apply. In this way you can demonstrate your own skill in decoration and design. If you have completely covered the surface with the first coat, subsequent coats will be in relief on the first coat and you can use this property to emphasize the design.

Using half-set plastic. If you are working with a detailed design—and even more if you are working on a rounded or non-horizontal surface—you will find it easier to control the flow of the plastic if you allow it to harden a little before applying it. The plastic starts to set as soon as the two parts are mixed and the longer you wait the less runny it is. You will need to experiment to find out when the plastic is suitably viscous for use on a curved surface or where you do not want it to run.

If you find that the top surface of the plastic, after application, is not perfectly smooth, don't worry. Though any movement may be almost imperceptible, the plastic will remain liquid enough for several hours to eliminate any dents in the surface.

To prevent drips. When covering a flat surface, you may want to build up a thick coat of enamel without letting it run down the edge of the surface. On small, flat brooches and other pieces of jewelry, on which you are applying a thin coat, surface tension will be enough to hold the plastic. When applying the plastic near the edge, treat it gently and it will dry to a neatly curved, smooth edge.

If the layer of plastic is too thick to allow this, use adhesive tape to build a 'wall' around the edge, to hold the plastic in. When the plastic has completely hardened, remove the tape. You will find a rough edge, raised from the overall surface. Smooth this off with fine abrasive paper—you may need to smooth some tape off this way too, if it has stuck too hard. The finer the paper you use, the better the finish, as the scratches will be smaller. Finally polish the edge. You can do this in two ways.

Polishing. You can polish an edge by applying a very thin layer of uncoloured plastic. This is liable to cause the same difficulties as before with the edge, but if you use the plastic half-set it will probably work. This method is best if there are significant scratch marks to cover up.

For polishing in general, use a liquid metal polish, such as Brasso, and a rag. This will shine up an edge or restore the shine to any cold-enamelled piece which has become dull.

Hardening

It takes several days for the plastic to harden completely but it is usually too solid to be workable about three hours after it is mixed. Once you have applied the plastic, the object should be left in a warm, dust-free place. After about 24 hours, the plastic should be set enough to be handled carefully. It will continue to harden for several days, especially if a thick coat has been applied. When fully hardened, it is extremely durable.

Reluctance to harden may be due to the application of too much pigment. But the plastic will set eventually—patience and a warm place are all that is required. It is inadvisable to try to speed up the initial hardening process by using more hardener than is recommended or by using high temperatures.

Safety hints

Treated properly, cold enamelling is perfectly safe. Any fumes given off by the plastic or pigment are not toxic or inflammable but the materials themselves will burn if a direct flame is applied to them.

They should on no account be eaten or drunk. Keep the materials away from food and from your eyes.

Sensitive skin may be irritated by contact with the plastic. Try not to touch it but, if any does get on your skin, wash it off at once with warm, soapy water.

Finally, since the plastic does stick hard to most surfaces when it sets, wipe it off with an old rag if any spills. Wrap the rag up, to prevent the plastic from spreading, and throw it away. Mixing containers can similarly be wiped and later re-used.

How to make a lover's knot

Yarn — macramé 3

Camera Press

A hard-wearing mat to use in a hall.

The lovers' knot is an attractive and quick way of making a motif. The motif is versatile and may be made up in a variety of yarns, depending on the purpose it will be used for.

With medium-weight yarn, like parcel string and macramé yarns, you can make hair decorations—mounted on slides or hair combs—buckles for using on belts and bracelets, key ring tabs and, if you squash the basic shape slightly, oval buttons. The buttons look particularly handsome made in string and sewn on suede and leather or, if you use macramé yarns, sew on dresses and shirts.

Heavy-weight yarns, such as rope, make hard-wearing door mats with a rustic air. Several motifs may be sewn together to form a large and beautiful mat.

When you have made one motif you will see that the stage illustrated by fig.4 is the crucial one. It dictates the finished size and shape of the article, so even up the shape and check that the motif is the right size at this stage—later on will be too late.

Ideally the yarn should be cut to the required length for making the article. However a great length of yarn can be difficult to handle, so several lengths may be used for big projects. Providing the raw ends are left at the back of the work they can be darned in afterwards. Small articles may be made of only two strands, such as the buttons, but usually four or five strands are used.

The important thing is to fill in the gaps in the motif completely.

To make working easier the ends which you thread in and out may be either dipped in a little glue or covered with sticky tape to prevent them fraying. Always leave ends at back of work.

To make a lovers' knot — buckle or mat

For a buckle motif 78mm x 42mm (3¼″x 1¾″):

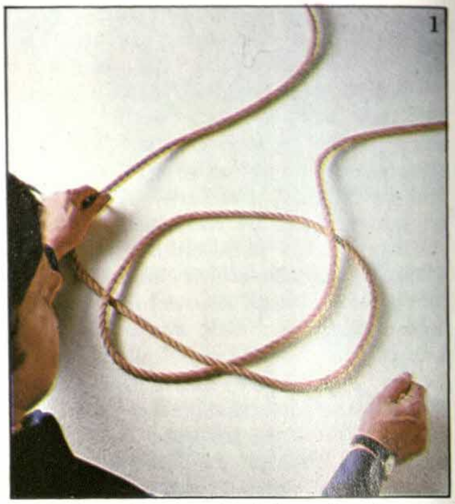
You will need:

2.5m (7′) length of parcel string.

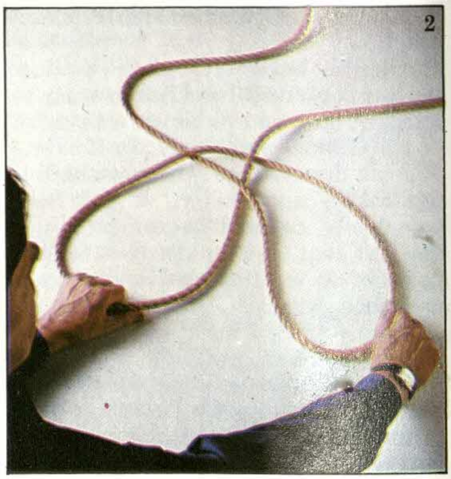
For a door mat 55cm x 35cm (22″x14″):

You will need:

35m (38yd) length 12mm (½″) thick manilla rep or sisal.

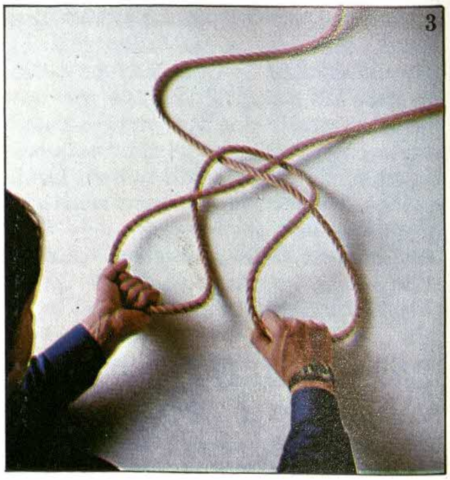


☐ Using the required length of yarn, bend it in the middle of the length of yarn. Pass the left strand of the yarn through the loop and pull it to the left (fig.1).



☐ Open out the knot by pulling the 2 loops that have been made.

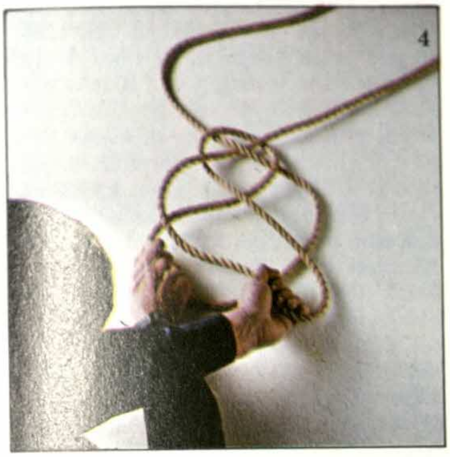
☐ Pull the loops out further still (fig.2), if you imagine them crossed, until they are about the size of the finished article.



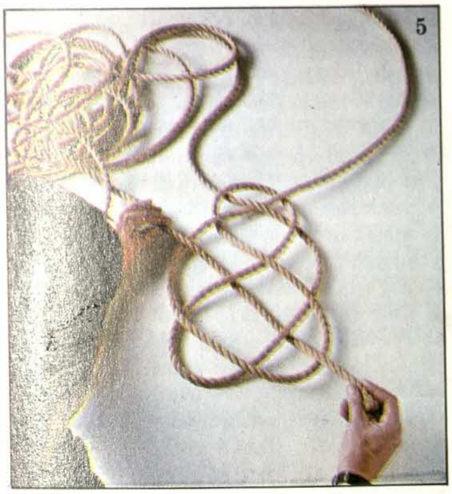
☐ Grasp a loop in each hand and twist the loops once to the left (fig.3).

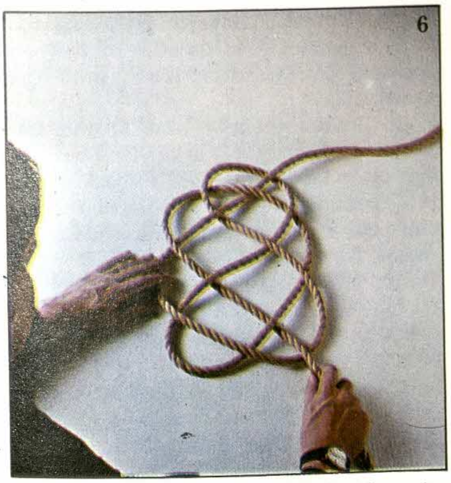
☐ Still grasping the loops, cross the

left hand over the right hand (fig.4).

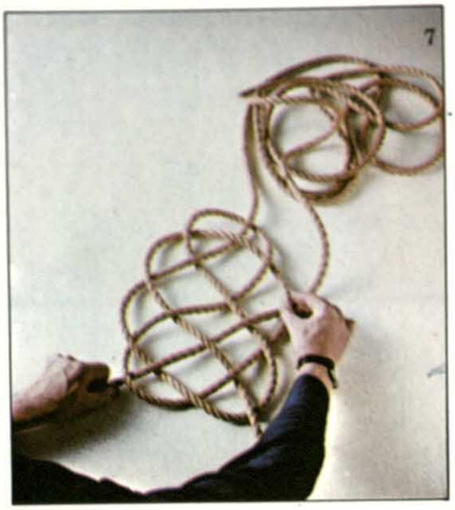


This stage dictates the size and shape of the finished article, so make the shape even and check that it is the size you want.

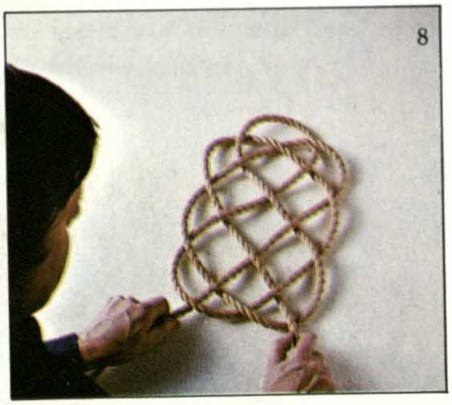




☐ Release the loops and hold them in position with the left hand. With the right hand pick up the strand which lies at the top left of the shape and bend it towards the left of the shape. Weave the yarn over the outside of the middle loop, under both the central strands of the left hand loop and over the top of the right hand loop (figs.5 and 6).

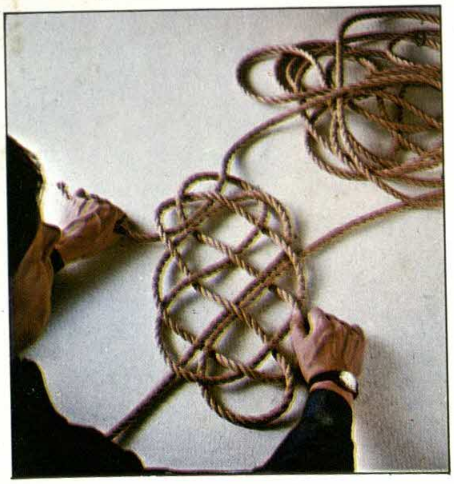


☐ Hold the other strand at the top of the work, thread it under the outside of the right middle loop then over, under, over, under the other strands, working from right to left (fig.7).



The shape should now be fairly rigid.

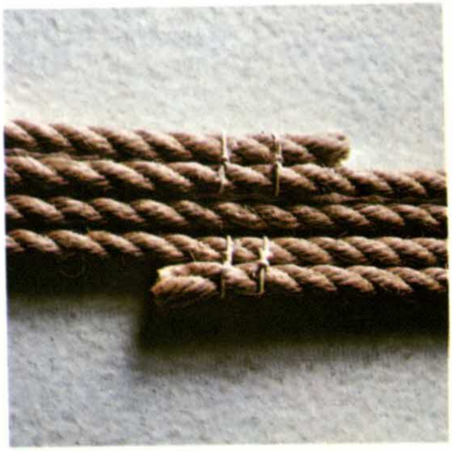
☐ Arrange the strands in a neat shape so that the loops are about the same size and the same distance away from their neighbours (fig.8).



☐ Grasp the right hand strand and bend it so that it lies parallel to the left hand strand. Thread the right hand strand under, over, under, over, under —ie following the exact path of the other woven strand but working from left to right (fig.9).

☐ Continue following the path of the woven strand, placing each strand side by side. When this end is exhausted start weaving with the other one; curve it to the right and follow round the bottom loop and then weave over, under etc, following the path indicated by the yarn till all the spaces have been filled up.

To finish the ends of the strands, remove and discard the sticky tape if this was used and, using a strong needle and thread or string, tie the raw ends to the back of the article or to a neighbouring strand (fig.10).



10. *Secure the ends on the wrong side.*

Lovers' knots in fine or heavy yarn.

Camera Press

A lovers' knot makes a smart buckle.

Victoria Drew

Making circular tablecloths

Cloth — sewing 4

Ready-made tablecloths can be expensive and are usually available in only a few standard sizes. By making your own tablecloth you can choose the colour and fabric to suit your room.

Fabrics

Any washable dress or furnishing fabrics, such as cottons, linen and man-made fibre mixtures are suitable. Dress fabrics are usually sold in 90cm, 115cm and 140cm (36", 45" and 54") widths and furnishing fabrics in widths of 122cm-132cm (48"-52").

Patterned or coloured sheeting, in widths of 175cm-274cm (70"-108"), is extremely practical because of its extra width.

Use leftover fabric to make matching napkins. The edges of napkins can be finished in the same way as described in the following chapter.

Circular cloths

For a small occasional table the cloth often looks best if it just clears the floor. For a dining table a drop of 23cm-30cm (9"-12") is more practical when people are seated at the table. If you want to make a floor length cloth for the dining table it is a good idea to make a smaller, matching cloth with an overhang of about 13cm (5"), with a plastic undercloth to protect the larger cloth from spills and stains (fig.1). It is much easier to wash and iron a small cloth.

Alternatively, if you're lucky enough to find a fabric with a matching, plasticized version, cover the top of the table cloth with a neat circle of the plasticized material.

Measuring. First measure the diameter of the tabletop (the width across the centre). Then decide on the depth of overhang, measuring from the tabletop downwards.

To find the overall diameter of cloth required, add 1.5cm (½") hem allowance to the depth of overhang, then double this total and add it to the diameter of the table (fig.2).

Joining fabric. The quickest way to make a circular tablecloth is to cut it from a square of fabric with each side equal to the diameter of the unfinished cloth. This avoids the necessity of seaming and of pattern matching. It is also the most economical method as you only need one length of fabric equal to the unfinished diameter.

If your chosen fabric is not wide enough to do this, join equal widths of fabric to each side of the main section, to make a square of fabric with sides equal to the diameter of the unfinished cloth (figs.3 and 4).

The main section of fabric should be wide enough to cover the tabletop (fig.4). You will need to buy a length of fabric twice the diameter of the unfinished cloth (allow extra for matching a pattern).

Figs. 3 and 4 show how to cut and assemble fabric to make a cloth with diameter of 168cm (66") from 122cm (48") wide fabric. For a cloth of another size make your own calculation by using the formula given in fig.4.

When the cloth is on the table the seams will fall in an uneven arc on the overhang. These will be unobtrusive on a patterned fabric.

With a plain fabric a feature can be made of the seams by covering them with braid or ribbon and then stitching corresponding lines of braid to the cloth to cross the seams at right angles (fig.5). This looks attractive only if the centre panel is narrower than the table.

Making a paper pattern. A pattern ensures an accurate shape when cutting

Jerry Tubby

The floor length cloth on this bedside table is made to match the valance on the bed and the curtain at its head.

out a circular tablecloth. You need an exact square of paper with each side a little longer than the radius (half the diameter) of the unfinished cloth.

Draw a quarter-circle on the paper with a radius of the finished cloth, plus 1.5cm (½") hem allowance, using the pin and string method. (Design know-how chapter 1, page 28). Cut along the pencilled line. This gives the pattern for one quarter of the unfinished cloth.

Making up. It is essential to make sure that, when cutting out and tacking, you match the pattern of the fabric.

Cut out the side panels and tack them to the main section of fabric 1.5cm (½") from the edge, with right sides together (figs. 3 and 4).

Machine stitch the seams using a plain seam or, if the cloth is to be washed regularly, using a flat fell seam to enclose the edges (see Sewing chapter 1, page 15).

If the seams are to be covered with braid or ribbon sew plain seams, with wrong sides together, trim seam allowances to 6mm (¼") and press them open. Cover raw edges with the trimming.

The resulting square should have sides equal to the diameter of the unfinished tablecloth.

Fold the square of fabric into quarters to make a square with sides equal to the radius of the cloth. Pin paper pattern on to the fabric so that its square corner is in the corner of the fabric where the folds meet. Cut through the fabric along the curved edge of the pattern. Do not cut along folds. Unpin pattern and unfold fabric.

Making the hem. Snip little 'V' shaped notches into the edge at 2.5cm (1") intervals, 9mm (⅜") deep. Turn in 1.5cm (½") all round, pin and tack. The notches will close up allowing the hem to lie flat (fig.6).

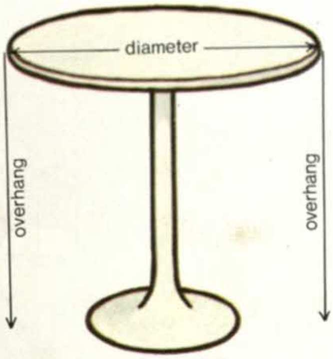
Neatening the hem with bias binding. Measure round the hem to determine the amount of bias binding needed, adding on an extra 5cm (2") for overlapping the binding.

Pin and tack bias binding over the turned hem to cover the raw edge, then machine stitch the binding into place (fig.7), neatening the ends by turning in 6mm (¼") and overlapping. Press the cloth.

Trimming. To trim the edge of the cloth choose a braid or fringe with enough 'give' to enable you to ease it smoothly round the curve (bias binding will not be needed).

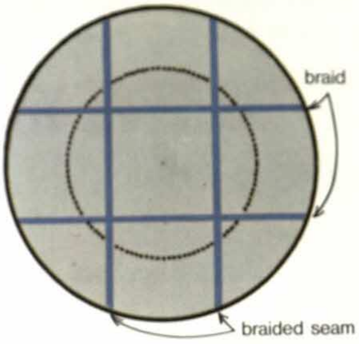
Snip small 'V' notches, 9mm (⅜") deep, into the edge of the cloth at 2.5cm (1") intervals. Turn up a 1.5cm (½") hem on to the right side of the cloth and attach the braid over the raw edge in the same way as you would attach the bias binding for an untrimmed hem. Press the finished cloth.

1. *Large circular tablecloth with small cloth covering the top.*

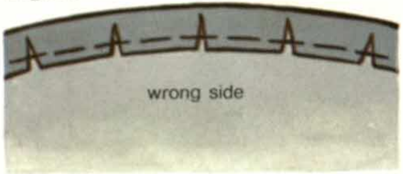


diameter of cloth=
diameter of table top+
2 x (overhang + 1.5cm (½in) hem allowance)

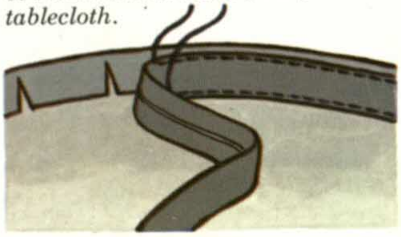
2. *Measuring for a circular tablecloth.*



5. *Cloth with braided seams and corresponding lines of braid at right angles.*

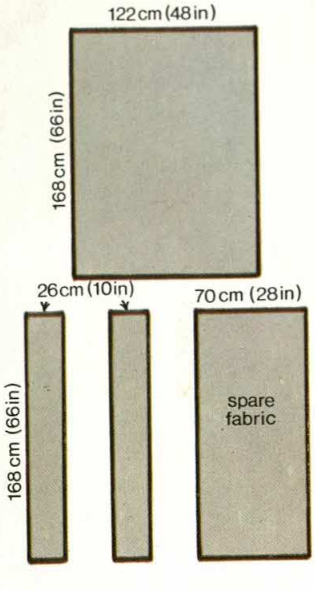


6. *Notched and tacked hem on a tablecloth.*



7. *Hem on a cloth neatened with bias binding.*

3



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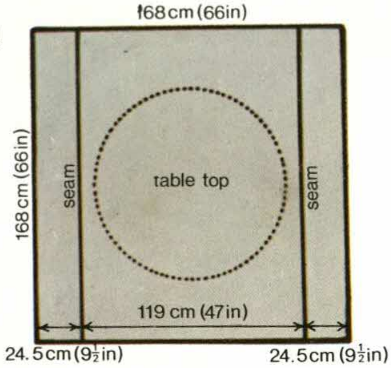


3.4. *Cutting and assembling 122cm (48") wide fabric for a circular cloth.*

Calculating width of side panels

Diameter (width) of tabletop = 105cm (41"). 2 x overhang of 30cm (12") plus 1.5cm (½") hem allowance = 63cm (25"). Diameter (width) of unfinished cloth = 168cm (66").

Finished width of centre panel = 122cm (48") minus 3cm (1") for joining seams = 119cm (47").

Therefore, combined width of panels needed = 168cm (66") minus 119cm (47") = 49cm (19") plus 3cm (1") for seams.

Cut width of each panel = 24.5cm (9½") + 1.5cm (½") = 26cm (10").

Barbara Firth

Boxes for storage units

There are many uses for boxes around the home. Smaller boxes are useful for holding trinkets, sewing materials, kitchen utensils and tape cassettes. Others, with handles, can be used as simple 'drawers' for spices and can be made to fit into the compartments of a spice rack. Or use them for storing nails and screws or other hardware. Larger boxes have other uses, such as for storing blankets and pillows under

Steve Bicknell

the bed, for children's toys or even as window boxes to put plants in.

The construction of a box is very simple; it has four sides, a bottom and sometimes a top or lid. The nice thing is that this basic structure doesn't change—no matter how large the box is. So, a jewelry box is made with the same basic construction as a box for toys or tools. The main difference is in the strength of the box. For a small box it is enough to nail the sides together at the corners, whereas for a large, heavy box some metal brackets and screws will be required.

Since they are so easy to make, boxes are particularly useful and rewarding projects that can be finished in an afternoon or two. A small box with a hinged lid can be adapted to hold various things and it can also be finished according to your taste. It can be dressed in an attractive fabric with a similar lining on the inside.

There are many possibilities for boxes that you can adapt to your own needs. You may have a sofa or a window seat with space underneath for a few storage boxes. It's easy to measure the height and depth and then to draw up the size of box, or boxes you need. You can buy handles in hardware stores that are very easy to attach.

Plywood

Plywood is made of layers of veneer glued together. The layers are glued together with the grain of each successive layer running at cross angles to one another. This strengthens the plywood and, in the thicker sizes prevents it from shrinking and splitting.

Plywood varies in thickness from 3mm ($\frac{1}{8}$") to 6mm ($\frac{1}{4}$") and multi-ply from 8mm ($\frac{5}{16}$") to 25mm (1").

It can be bought with various surface finishes such as pine, birch and ash. Hardwood veneer is also used for a surface finish, making it a very useful and inexpensive alternative for covering large areas where a good finish is required.

To make a small box

This box, when completed, measures 20cm x 17cm (8"x7"), height 8cm (3"). Depending on the finish, you can use it for trinkets, cosmetics or sewing materials. If you use it for jewelry you can line the inside with felt or velvet or adhesive-backed plush; for sewing materials you can sub-divide the box (see Carpentry chapter 2, page 102).

By cutting out the wood where the hinges are placed, the lid fits flat on the box. A notch cut in the centre front forms a recess for a finger to lift the lid.

The box can be completed in a number of ways; it can be stained or polished and the inside can be lined with felt.

You will need:

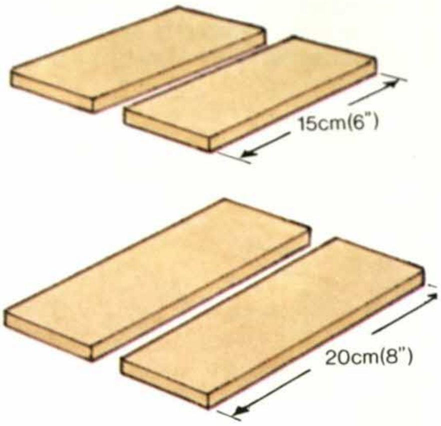
Tools

Hammer.
Saw.
Screwdriver.
Carpenter's square.
Pencil.
Ruler or tape measure.
Chisel.
Nail punch.
Trimming knife (optional).

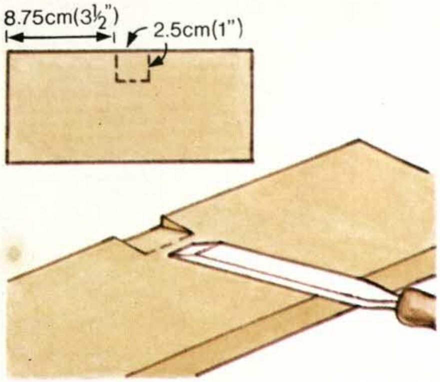
Materials

Softwood, 8cm x 12mm (3"x$\frac{1}{2}$"), 76cm (30") long.
Plywood, 20cm x 36cm (8"x15"), 6mm ($\frac{1}{4}$") thick—birch plywood is ideal but any small offcut will do.
Panel pins, 2.5cm (1"), about 24.
Brass hinges, 2 small ones with 6mm ($\frac{1}{4}$") screws.
Medium and fine glasspaper.
Wood glue.

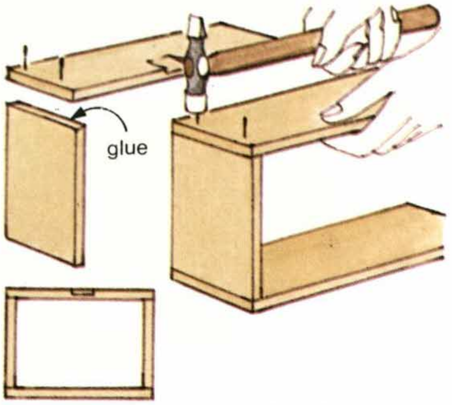
1. From the softwood mark and cut 2 pieces 20cm (8") long and 2 pieces 15cm (6") long.
Sand the rough ends lightly.



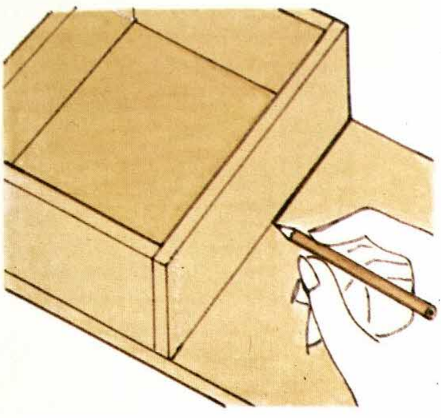
To make a notch (to allow you to get your fingers under the lid to open it)
2. Take one of the 20cm (8") pieces, mark as shown and make a small indentation with the chisel. To do this lay the piece flat, and, putting a little pressure on the chisel, score along two sides with a trimming knife, then slice off the wood as shown. You can omit this if it's too difficult.



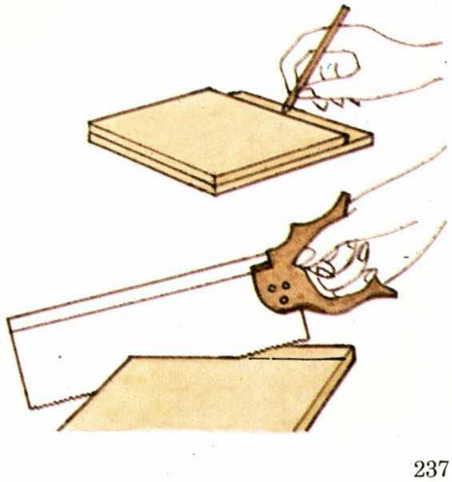
To nail the sides together
3. Starting with a 20cm (8") side put the nails in halfway while the piece of wood is flat on the work surface.
Then complete nailing, as shown, after you have put some glue on the surfaces —ie one nail for every corner.
4. Turn the box over and nail on the 3rd and 4th pieces.



To make the base and lid
5. Hold the box on the plywood so that the sides meet the ends of the box. Mark off as shown and saw off.

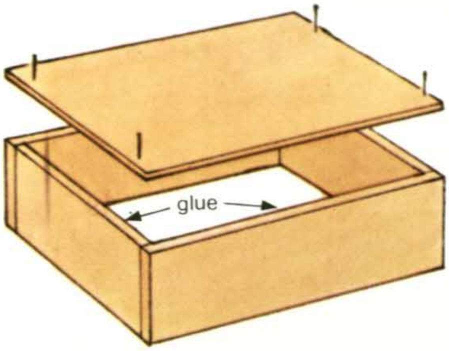


6. Use this piece of plywood to mark one additional piece then saw off to the same size.



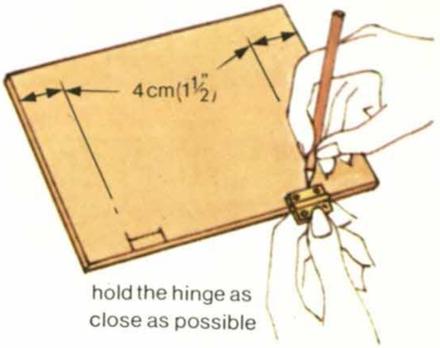
Paul Williams

7. Tap 4 nails part of the way into the plywood for the base. Put a small amount of glue on the 4 bottom edges of the box. Put the plywood piece on to the glued edges of the box. Make sure that it is placed correctly as you drive in the nails. Put in another 6 or 8 nails.



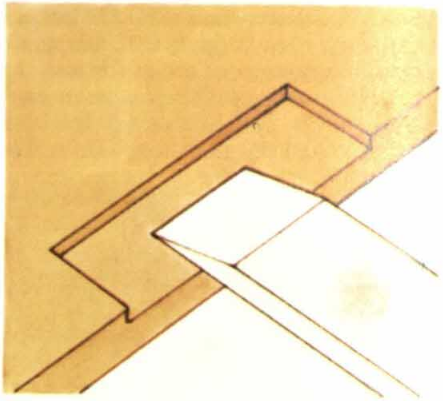
To put the hinges on

8. Start with the lid. Measure 4cm (1½″) in from the ends along one 20cm (8″) edge and mark a line to use as a guide when attaching the hinges. Place the hinge on the inside of this line and mark the outline.



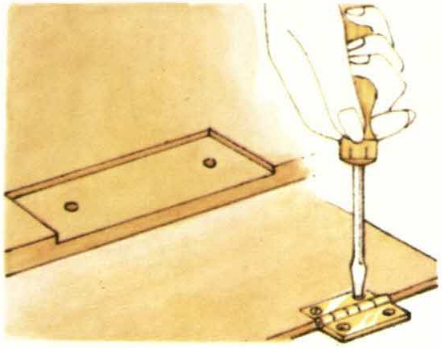
hold the hinge as close as possible

9. Using the chisel, make a recess for the hinge. The easiest way is to score marks along the 3 sides to the depth of the hinge thickness and then remove the wood from the side.

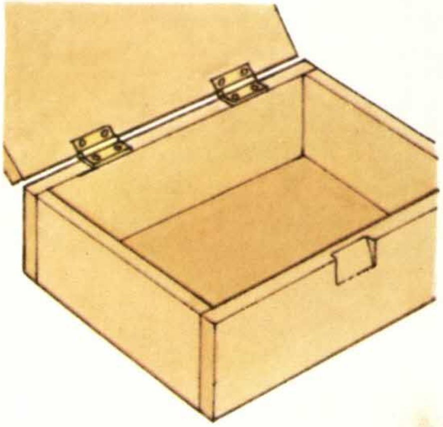


10. Insert the hinge and mark the holes for the screws. Using a nail punch, punch a small hole in the centre of each mark.

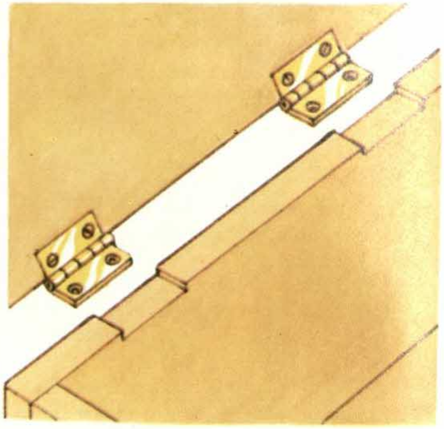
11. Using the small brass screws, screw the hinge to the lid. Repeat for the other hinge.



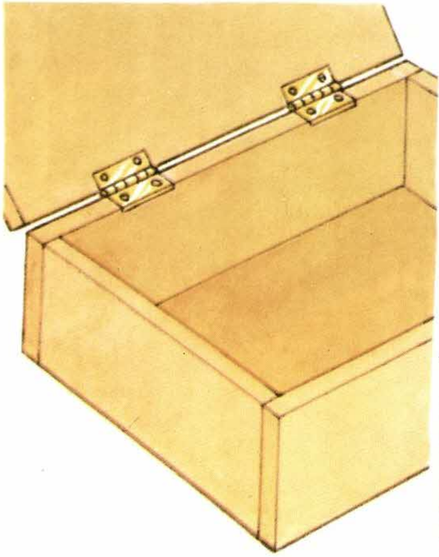
12. Place the lid on the box and mark lines along the sides of the hinges. Score these lines. (Make sure that the lid is held flush all round.)



13. Using the chisel, remove the wood where the hinges fit. The notch should be very shallow—only as deep as the thickness of one leaf of the hinge.

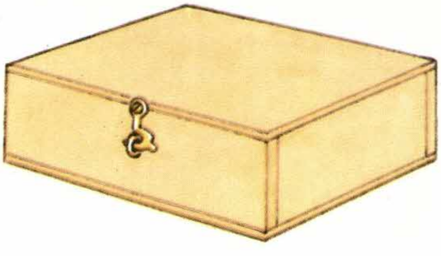


14. Holding the lid in position, mark the screw-holes, then punch small holes and screw the lid to the box.



15. Sand the box using first the medium glasspaper, then the fine glasspaper. You can round the edges a little to give the box a softer appearance.

16. If you want to paint the box, fill the cracks along the edges with a cellulose filler, let it dry and sand it smooth. The box can be left natural and covered with a coat of clear, matt polyurethane or designs and patterns can be painted on top of a base colour.

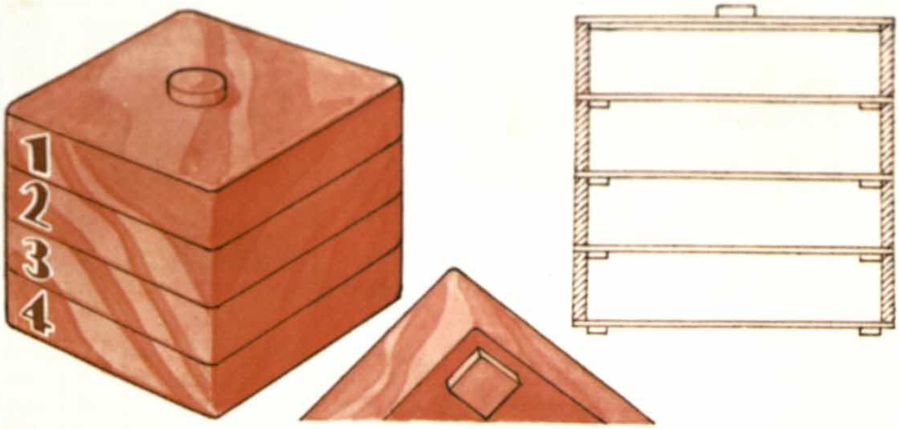


Instead of making a finger notch on the front of the box, a brass hook and eye can be used. Designer A. Martensson.

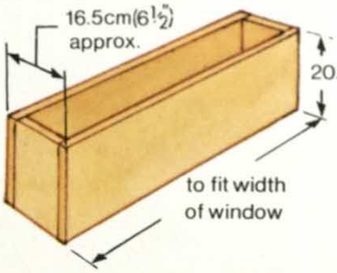
Paul Kemp

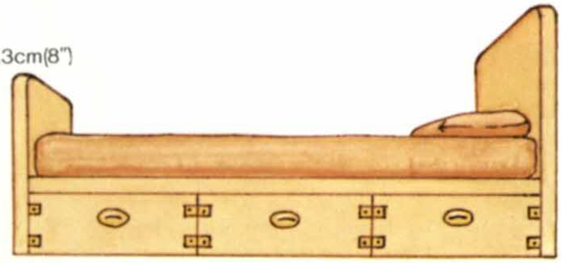
Alternative designs

Stacking boxes can be painted bright colours and stick-on letters or numbers can be used to decorate them.
Make the sides, say, 23cm (9″) deep and nail on a bottom to each box.
Underneath, at each corner, nail and glue a small block of plywood, positioned to miss the sides of the box below. This will hold the stacked boxes in position.
Only the top box has a lid. The lid is not hinged as before but is made from 2 pieces of plywood—one the same size as the bottom and the other to fit inside the box. Glue the 2 pieces together.

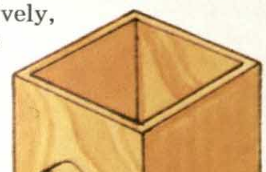


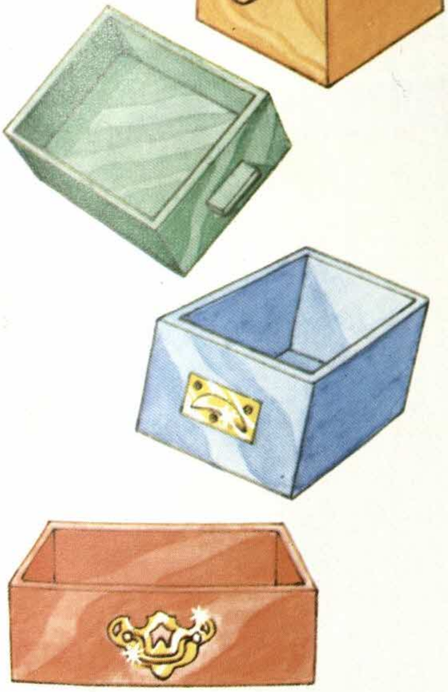
Window box. Make the sides from plywood at least 12mm (½″) thick and use screws instead of nails to put it together. Drill small holes in the bottom for drainage.
Boxes under the bed. Use materials similar to those for the window box and attach metal brackets to the corners. Bought handles are easy to screw on.





Boxes for drawers. Make handles from blocks of wood or pieces of dowel and attach by screwing in from the back. Alternatively, bought handles can be screwed on from the front.





The boxes can be adapted to drawers and used for spices, sugar or salt.

Alasdair Ogilvie

Decorating with handcut stencils

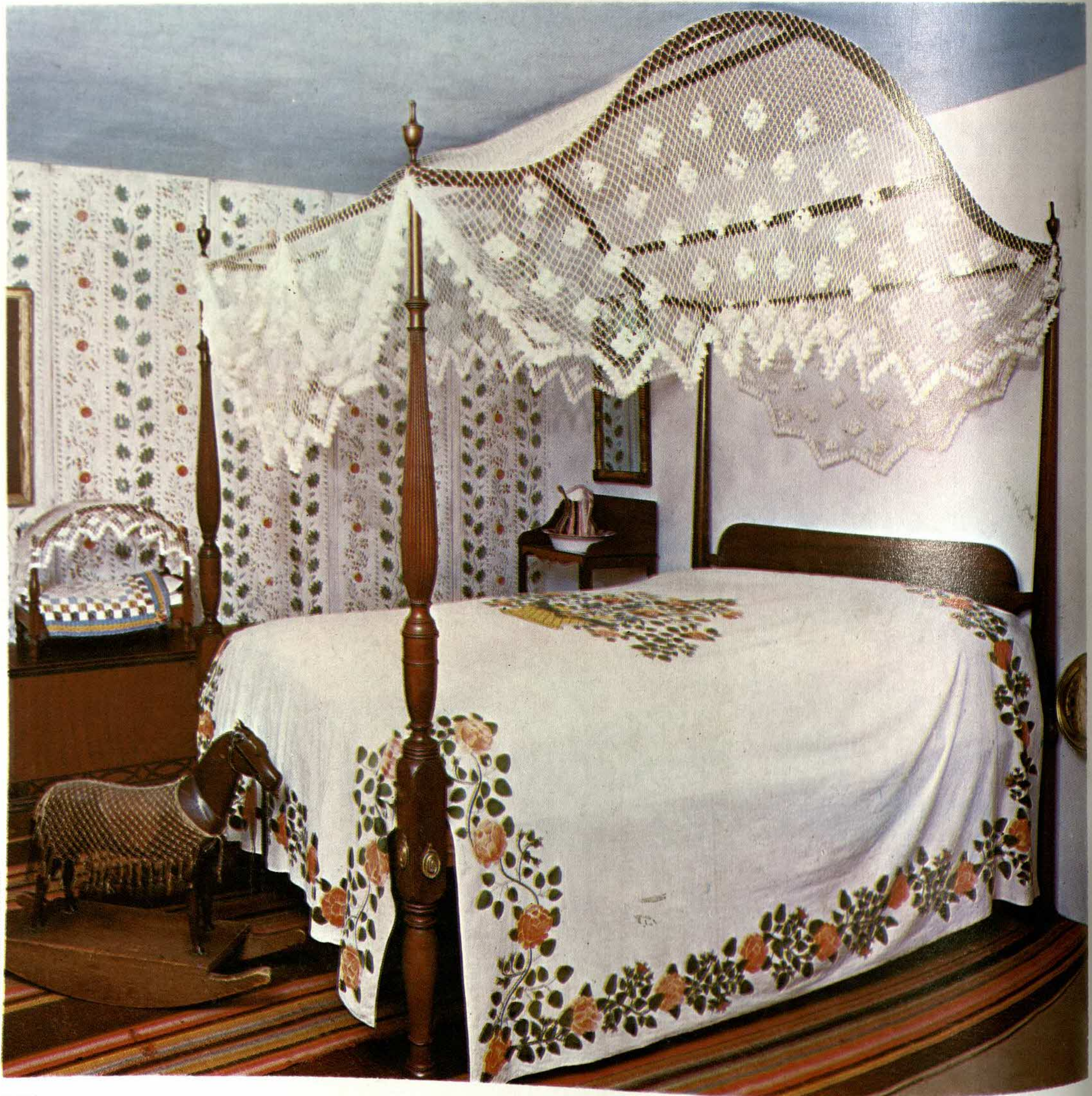
Colour — stencils 2

The American colonists were among the first to exploit the marvellous ways stencils could be used in home decoration. In 18th-century America wallpaper was a luxury only the very wealthy could afford, but the colonists soon found that with a little imagination and patience they could simulate the elegance of imported, handblocked paper by cutting out designs in stencils. Using stencils they found they could repeat the same motif again and again and get a uniform overall pattern just like that produced by fine printing techniques.

For their designs the colonists turned to the natural world around them—willows, oak leaves, fruits—and to patriotic motifs like the American eagle. They did not stop at walls but stencilled floors to resemble floor coverings and other artifacts to look like items difficult to get in the New World. The result was a fresh, original style.

Like all good design these early ones are still popular but, just as the colonists adapted European styles to suit

Delicately stencilled 18th-century room from the American Museum in Britain.



The American Museum in Britain

their needs and environment, their designs in turn can be adapted to modern tastes. The trunk in the photograph, for example, has a motif adapted from the copy of an 18th century wallpaper which lines it.

General rules

When stencilling a surface it is important that it is properly cleaned or the paint will not adhere.

Wax must be removed from floors and furniture and sometimes an old surface, such as a wall or trunk, must be repainted. If you are stencilling on an old, solid-coloured wallpaper or wall, scrub it before you begin.

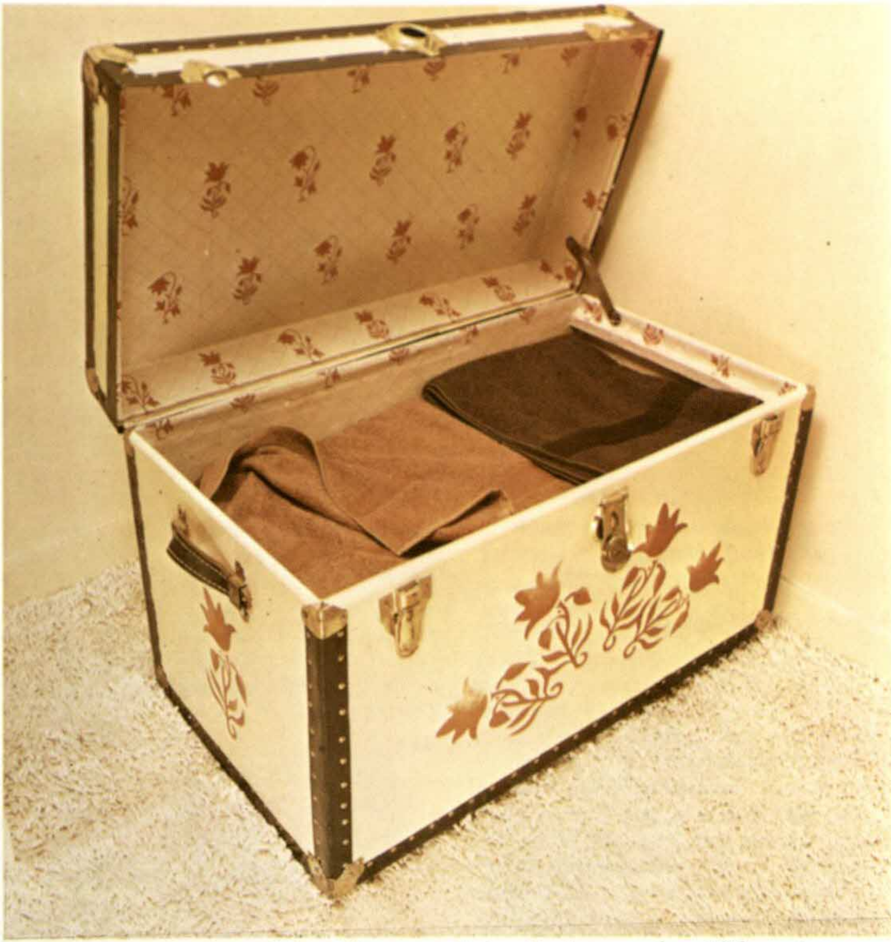
Choosing the right paint. The sort of paint you use will depend on the surface upon which you are working. Many experts recommend poster colours, which can be sealed when dry with clear lacquer, but high-gloss surfaces such as mirrors or tiles should be sprayed with spray-on enamel. There is no reason why modern oil, emulsion or vinyl paints should not be used on walls. Acrylic polymer paint is hardwearing and recommended for floors. Gold and silver paints can look most effective too.

If you are using a mixed paint be sure that you have prepared enough for the entire surface. It is difficult to mix and match a colour in the middle of a job, since a paint that is dry is never the same shade as when it is wet. Stencilling a wall can take a long time and mixed paint can be stored in a tightly lidded container between sessions.

Finally, when choosing your colour scheme, remember that it is difficult to stencil a light colour over a dark one as several coats may be required.

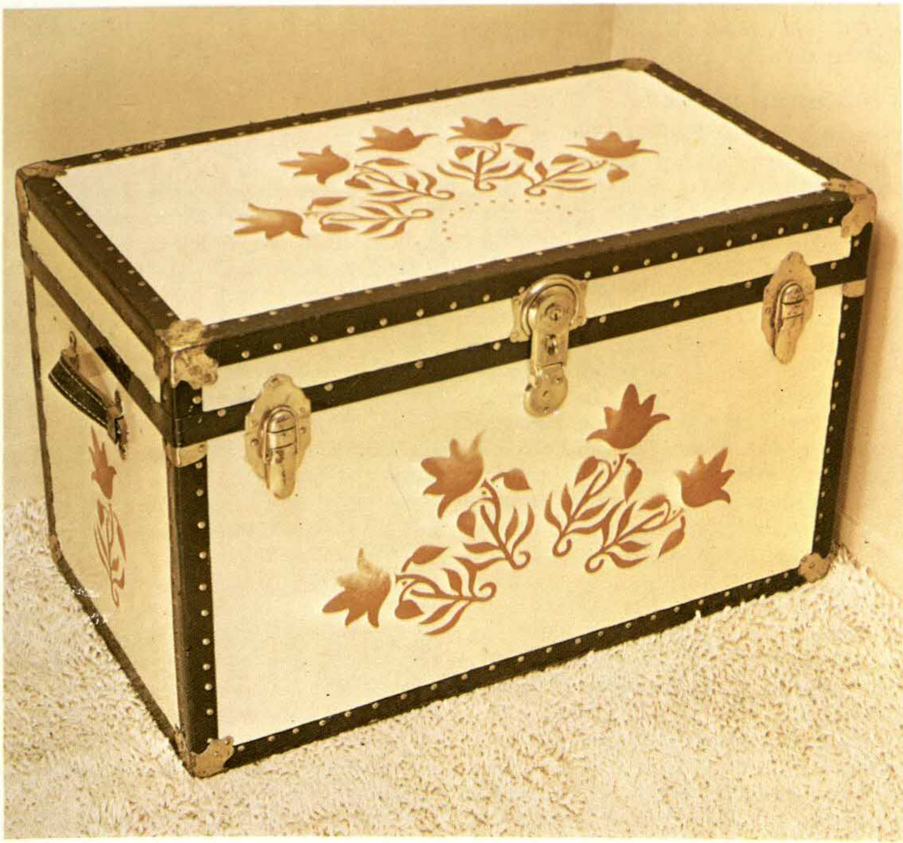
The American Museum in Britain.

A beautifully stencilled chair from The American Museum in Britain.



Jerry Tubby

Stencilled trunk adapted from the paper lining it. A copy of an 18th-century paper by Sibyl Colefax and John Fowler (trace pattern on page 228).



Jerry Tubby

Floor border inspired from a patchwork quilt motif. Designed by Joanna Ball (trace pattern on page 227).

Decorating ideas

Once you know how to make a stencil the possibilities of stencil design are infinite. Ideas can come from many sources: the repetition or adaptation of earlier designs is one.

Designs can be traced from natural objects like leaves or based on existing motifs, as are the blue birds on the child's cot in the photograph, which have been taken from the quilt fabric.

Positioning depends on personal fancy. Tin and glassware, such as bread bins and canisters, can be decorated or lettered with stencils, and suitcases, which all look so much alike, can be made identifiable by stencilling on initials or other personal motifs.

To stencil a floor

You can stencil floor boards or cork tiles in all-over designs like the American colonists or you can stencil a border pattern round the edge. The latter can be especially useful when moving into a new house if your old carpet doesn't quite cover your new floor. By stencilling with colours related to the carpet you can turn a misfortune into a successfully integrated design.

Before you cut your stencil, measure the size of the floor space to be filled. The design you choose must be able to fit an exact number of times into the strip or strips to be stencilled, so the size of your motif depends partly on this.

You will need:

Oil bound or waterbased paint or (recommended) acrylic polymer paint.

Clear gloss polyurethane wood finish.

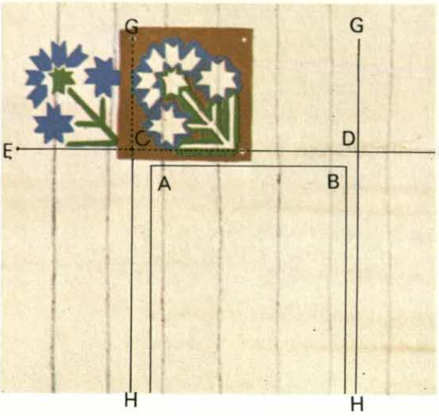
Stencil cut to size.

Stencil brushes or plastic sponge.

Chalk.

Sharp point, eg skewer.

To work a border. First chalk the outline of the carpet on the floor (AB in fig.1). Decide how far from the edge of the carpet you want the design and chalk a second line (CD) which will mark the base line of the pattern. Extend this line at each corner (EF and GH). The first stencilled motif will be in the top left hand corner.



Mike Rose

1. *How to align stencils.*

☐ When you have decided on your repeat distance, mark it on your stencil by making four holes as illustrated. These can be made with a compass point, skewer or other sharp instrument. The two holes at the bottom should be along the base line. These and the equidistant ones at the top, will keep the design straight.

☐ Starting at the top left corner, fasten the stencil down with masking tape and mark the floor through the holes with pencil or coloured chalk. Be sure the bottom holes are along your base line.

☐ Now paint in the motif with either a stencil brush or a piece of plastic sponge. When finished, lift the stencil carefully and move it to the next place, taking care to align it again with the base line and to place the left side holes over the previous right side dots. This automatically gives you the right spacing.

☐ If your design has more than one colour and the different coloured areas are fairly far apart you can stencil both colours as you go. If not, mask out the second colour and do all one colour first. Before you begin the second colour you must let the first dry completely. When you do begin, remember to use the original chalk dots for lining up your stencil.

☐ Any blobs or mistakes can be scraped off with a sharp knife or razor blade.

☐ Before finishing with polyurethane, remove all chalk marks and allow at least two days for paint to dry.

☐ Give three coats of polyurethane finish, allowing it to dry well between each coat.

Using two or more stencils

The variation in wall sizes and the fact that some are not quite square can cause special problems, but by careful measurement these can be overcome. Don't just start at one end and hope for the best.

Give yourself lightly pencilled guide lines, which can be removed later, and first work out the number of times your design must be repeated.

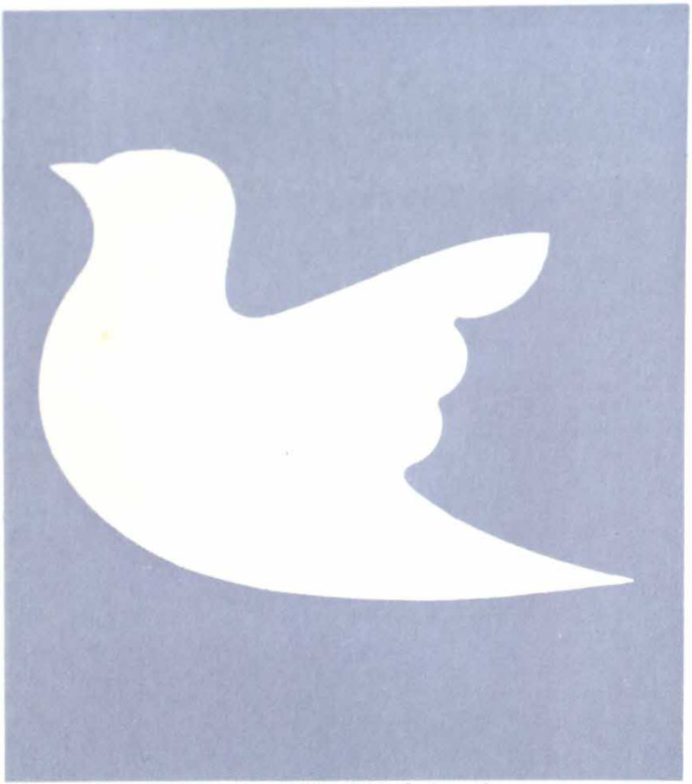
☐ To place a border accurately use the hole and dot method described above. When working round a window or door calculate the exact number of times the design can be repeated and decide whether you should have a centralized motif at either end of the central point, to even out the design.

If the motif will not quite fit in you might cut an auxiliary design such as a dot pattern (fig.2) or other motif to fill in the gaps.

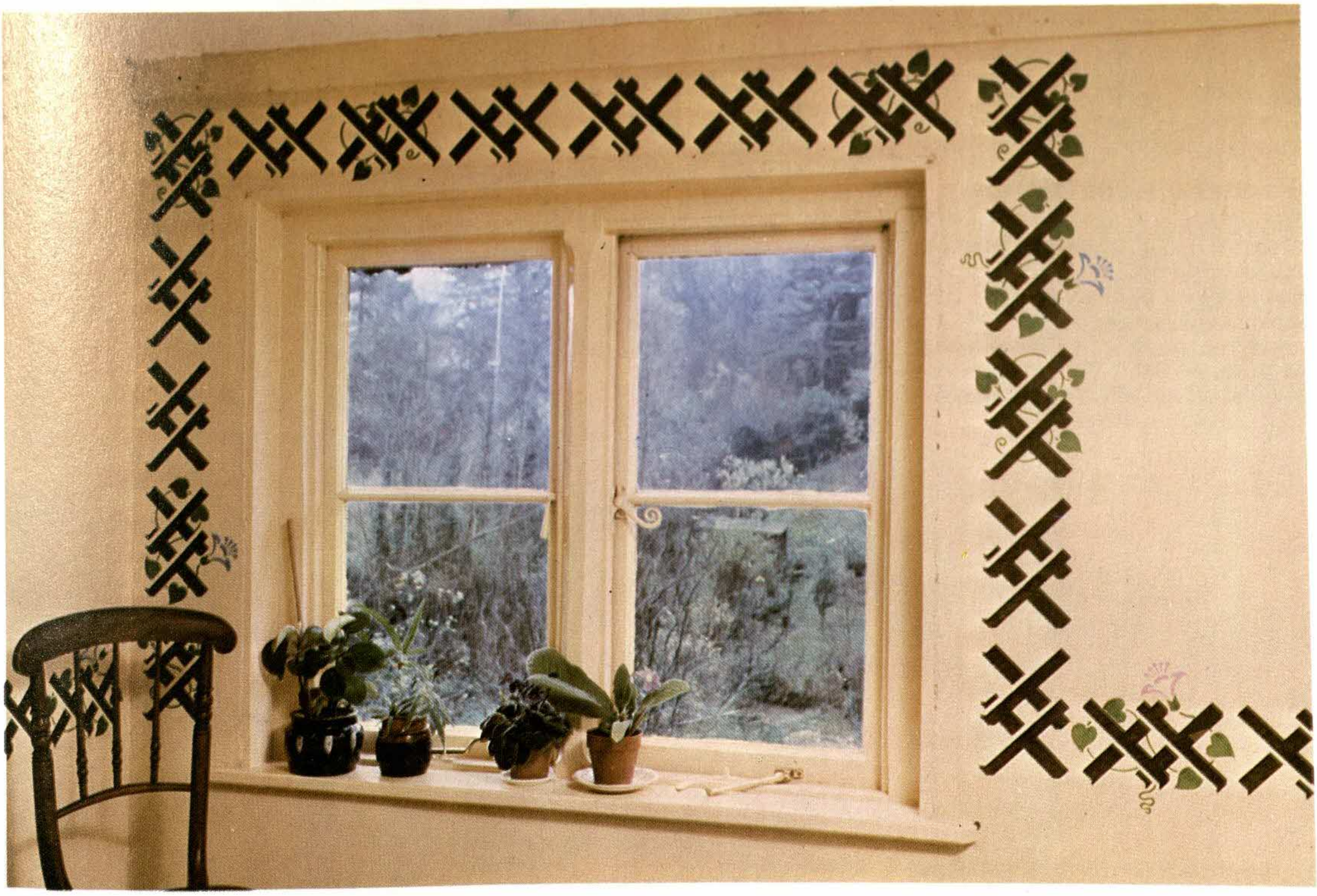
2. *Dot motifs can fill border gaps.*

Secondary stencil motifs can also be used to point up the corners of a border by accentuating them, yet filling in gaps at the same time. The wall border illustrated was stencilled with three complementary stencils—a trellis, vine and a flower. This allows latitude for dealing with difficult corners and other areas where the design must be adjusted.

If the second stencil pattern overlaps the first in any way, make certain the first pattern is dry before you apply the second.



Above: trace pattern for stylized bird stencil.
Left: stencil motifs can come from a number of sources. This one is taken from the fabric designed by Shirley Liger.
Below: stencils make handsome borders, as shown by this trellis design by Janet Allen (trace pattern on page 229).



Jerry Tubby

Weaving round mats and bases

The inside or centre of a table mat is the beginning of most baskets, regardless of size or shape. To become familiar with the making of the centre—ie a woven base—and the technique of pairing, make these mats in various sizes. At the same time you will be using the techniques of waling and making a trac border (Basketry chapter 1, page 220).

To make the table mats

Cane place mats look handsome on any table—they're good insulators and they thrive on being scrubbed clean with water—not soap. And you'll be thrilled at the cost.

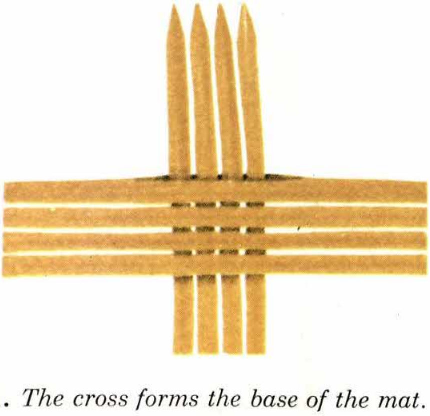
To make 6 mats of 19cm (7½") diameter or 4 mats of 24cm (9½") or 10 mats of 12.5cm (5") diameter:

You will need:
170gm (6oz) No.5 (2.5mm) cane.
113gm (4oz) No.3 (2mm) cane.
283gm (10oz) No.8 (3mm) cane.

Tools
Side-cutters—you can use garden secateurs instead.
A bodkin—you can use a medium size knitting needle instead.

To make 19cm (7½") mat

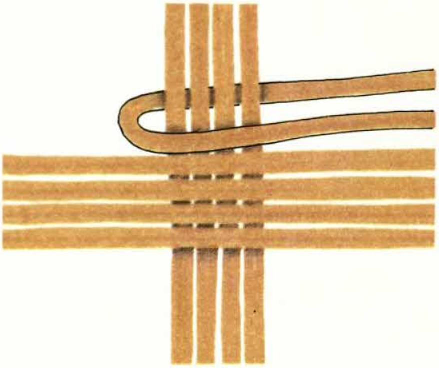
☐ Cut 8 pieces of No.8 (3mm) cane 17cm (6½") long. These are for the base sticks which form the spokes of the mat. Point 4 of them at one end, and make a split of about 2.5cm (1") in the centre of the other 4. Use the bodkin to form the split. Thread all 4 of the pointed sticks into the split sticks so that they form a cross (fig.1).



1. *The cross forms the base of the mat.*

Victoria Drew

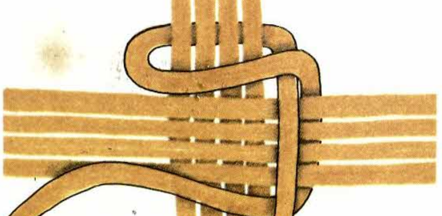
☐ Bend a length of prepared (ie soaked in hot water for about 20 minutes) No.3 (2mm) cane roughly in the middle. Make this bend quite sharp. If the cane will not bend without cracking, twist it with the thumbs and forefingers of both hands held closely together. Twist each hand in opposite directions until the fibres of the cane give way. Loop this bend around one 'arm' of the cross and bring both ends to the front (fig.2).



2. *First step in pairing.*

These 2 ends of cane form 2 weavers and will now be referred to as the left-hand weaver and the right-hand weaver.

Pairing. Take the left-hand weaver in front of the same arm, over the top of the other weaver, round the back of the next arm and then to the front again as shown in fig.3.



3. *Pairing continued.*

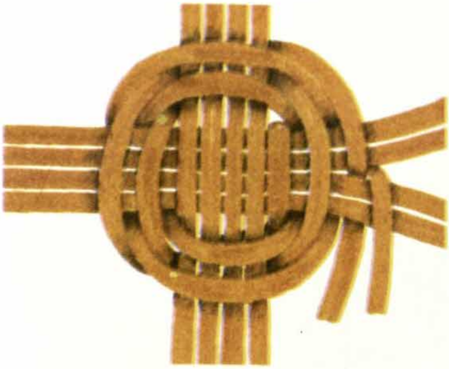
This simple woven base—the basis of most baskets—makes an elegant cheese platter. Designed by Barbara Maynard.

Dick Miller

☐ Repeat with the other end: across in front of one arm, over the other weaver and round the back of the next arm (fig.3).
This is called pairing and is nearly always used for round and oval bases. Basically it's 'in front of one and behind one' and you should turn the work around with each stroke.

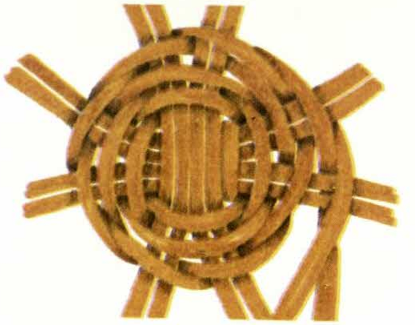
☐ Continue in this way until you have gone right round twice.

☐ On the 3rd round the arms must be opened into pairs. Instead of going right round the back of each arm, on the second part of the stroke bring the weaver to the front in between the middle two, making 2 pairs (fig.4).



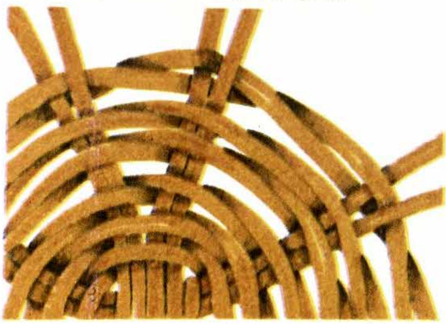
4. *Opening the cross to form the spokes.*

Repeat all the way round so that you have 8 pairs evenly spaced (fig.5).



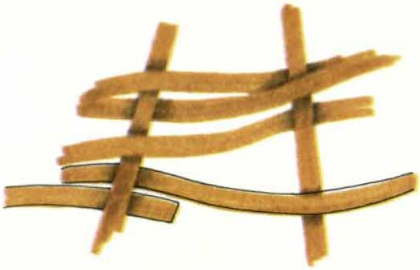
5. *The cross opened forms eight pairs.*

☐ Weave in the same way for another 2 rounds, making 5 rounds in all, then open all the sticks on the next round so that they are all single (fig.6).



6. *The pairs opened to single spokes.*

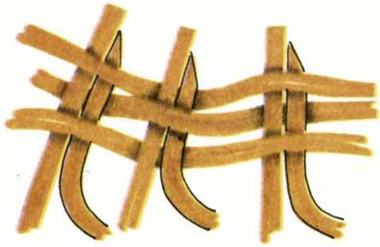
Joining. If you need to join in a new piece of cane, wait until the old one is on the outside. Pull it back with your left thumb and slip the new cane into the work so that it lies between this end and the work. The old end will protrude to the front and the new one to the back (fig.7).



7. *Joining a new piece of cane.*

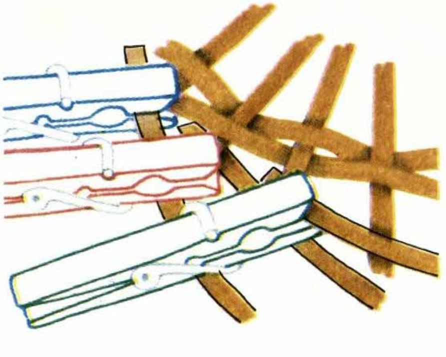
☐ Continue to pair until the work has a diameter of 9cm (3½″). Secure the pairing by threading the weavers under one cane of the previous round.

☐ Join in 3 weavers of No.3 (2mm) cane. This can be done in two ways: a) they can be laid in 3 consecutive spaces or b) they can be inserted into the weaving down by the side of 3 consecutive sticks and then bent down to the front (fig.8).



8. *Inserting cane for waling.*

If you use method a) clip the ends down with a clothes peg until you have woven over them (fig.9).



9. *Using clothes pegs to hold cane.*

☐ Put on 3 rounds of waling with these 3 weavers. Step up after each round and finish off ends.

☐ Pair for 4 rounds.

☐ Wale for another 2 rounds.

☐ Trim all the ends of the weavers close to the work and cut off any surplus stick ends protruding beyond the weaving.

To make a trac border. Cut 32 border stakes of No.5 (2.5mm) cane 31cm (12″) long. Soak them in hot water for 10 minutes. Point one end of each stake.

☐ Insert one stake into the weaving on both sides of every stick. Insert the pointed ends and push them right down as far as they will go. Use the bodkin to form a channel for the stakes to slip into.

☐ Put on a trac border. Bend each pair of border stakes in turn down to the right about 2.5cm (1″) beyond the waling. Pass them behind the next pair, in front of the next, then behind and in front again. Tuck them into the back of the work in the next space. Repeat all the way round. The last few pairs will weave in and out of stakes that are already bent down.

☐ Trim the ends of the stakes with a diagonal cut so that the ends lie snugly and safely against a stake. Do not cut them too short or the ends will slip through to the front; if they are too long they will catch on to things and make the mat unstable.

To make 24cm (9½″) mat

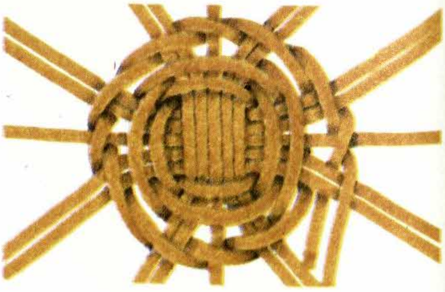
You will need the same materials as before. The same quantity of cane will make 4 mats of this size.
The instructions are similar to the previous ones but the measurements and numbers differ slightly.

☐ Cut 10 pieces of No.8 (3mm) cane 20cm (8″) long.

☐ Split 5 of these in the centre with the bodkin and point the other 5 at one end. Thread the pointed pieces through the split to form a cross.

☐ Using prepared No.3 (2mm) cane, pair for 2 rounds.

☐ On the third round open the arms in 2 pairs with an odd one in the middle. Each arm will now be split into 2,1,2, (fig.10).



10. *Opening the cross to form spokes.*

☐ Pair for 3 rounds and then open the sticks into singles.

☐ Continue pairing until the work measures 11cm (4½") in diameter.

☐ Put on 2 rounds of waling, 5 rounds of pairing and then a further 2 rounds of waling.

☐ Trim the ends of the weavers and cut off any surplus sticks protruding beyond the waling.

☐ Cut 40 pieces of prepared No.5 (2.5mm) cane 31cm (12") long.

☐ Point one end of each piece and insert this end into the weaving of the base, one each side of each stick.

☐ Put on a trac border and trim all the surplus ends.

To make 12.5cm (5") mat

The same quantity of materials as before will make 10 small mats.

☐ Cut 6 base sticks of No.8 (3mm) cane 15cm (6") long and thread 3 pointed ones into 3 split ones to make a cross (see fig.1).

☐ Pair for 2 rounds with No.3 (2mm) cane.

☐ Open all the sticks to singles on the 3rd round and continue to pair until the work measures 6cm (2½").

☐ Wale for 2 rounds. Trim weavers and sticks.

☐ Cut 24 border stakes of No.5 (2.5 mm) cane and put on a trac border, finishing as before.

The cheese platter

For a cheese platter 38cm (15") in diameter thicker cane is used, as the larger a piece of work is, the thicker and stronger the cane must be. The techniques are similar to those used for making the smaller mats.

You will need:

57gm (2oz) No.10 (3.35mm) cane.
57gm (2oz) No.5 (2.5mm) cane.
57gm (2oz) No.8 (3mm) cane.

☐ Start with 12 base sticks of No.10 cane 34cm (12½") long. Soak them for about 20 minutes. Pierce 6 in the centre and point one end of the other 6.

☐ Thread the pointed ones through splits to form a flat cross. If the sticks bunch together make the splits larger so that they remain flat.

☐ Bend a length of prepared No.5 (2.5mm) cane in the centre and loop it around one arm of the cross.

☐ Pair for 2 rounds, keeping the sticks of each arm together.

☐ On the 3rd round open the sticks into 12 groups of pairs, evenly all round the base.

☐ Put on 4 more rounds of pairing then open the sticks into singles.

☐ Continue pairing until the work measures 14cm (5½") in diameter. Join in new lengths of prepared cane as needed.

☐ Wale for 2 rounds, pair for 4 rounds, wale for 2 rounds, pair for 4 rounds, wale for 2 rounds.

☐ Trim all the surplus ends of the weavers and sticks.

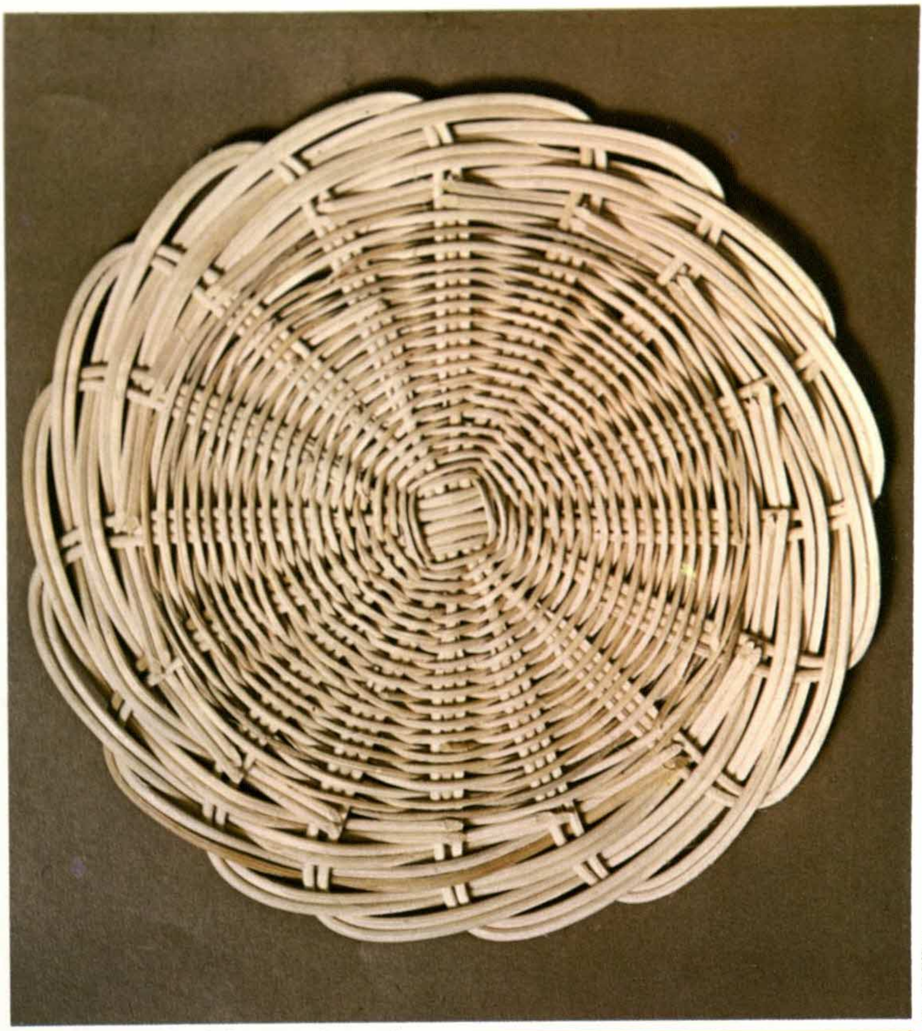
☐ Cut 48 pieces of No.8 (3mm) cane 51cm (20") long. Point one end of each piece.

☐ Insert them into the weaving of the base, one on each side of each base stick. Insert them as far as the waling nearest to the centre to make a distinctive pattern.

☐ Put on a trac border. Bend a pair down to the right 4.5cm (1¾") beyond the waling. Weave this pair behind and then in front of the next stakes 3 times, and then tuck it to the back in the next space.

☐ Repeat with each pair of stakes in turn. The last few will weave behind and in front of stakes that are already bent down. Make sure that each pair is bent down exactly the same distance from the weaving and that the work is even.

☐ Trim the ends of the stakes diagonally so that the ends lie snugly and safely against a stake.


Dick Miller

The wrong side of the mat shows the ends of the cane lying against the spokes. The cane must not be cut too short or the ends will slip to the front.

General hints

To help you to make a neat, closely woven base follow these hints:

Make quite sure that the left weaver passes over the top of the other one on its way to the back.

Never leave one of the weavers at the back of the work—it must return to the front before you use the next one.

If you hold the base too tightly in your left hand it will curl up towards you. Try to hold it loosely and, in this case, flat.

If you find that the rounds of weaving have a gap between them, try pulling each weaver down hard when it is at the back of the work and then merely slip it to the front. Don't pull down when the weaver is to the front as this will distort the sticks and make the mat bend upwards.

When you are ready to divide the sticks out, pull them apart with both hands and slip the weaver in between. Don't make the mistake of trying to make the weaver divide them.

Introduction to lapidary

Lapidary 1

Collecting pebbles for lapidary is a pastime the whole family can enjoy.

Tourist Photo Library

Who has not walked along a beach near the water line and been tempted to take home a special pebble with fascinating colours that glistened in the sunlight? Or perhaps you have been for a walk in hills near your home and spotted a little piece of mineral in a pile of stones. If you have thought of picking up pebbles and stones and doing something with them, then you have already shown an interest in lapidary.

Lapidary is the craft of dealing with rocks and stones, from ordinary beach pebbles to precious gems and multi-faceted specimens of minerals—the word 'lapidary' itself comes from a Latin word that simply means 'stone'.

The most obvious use for attractive stones is in jewelry. Even simple pebbles that you find on a beach can be turned into unique and exciting rings, pendants, bracelets or ear-rings—the scope for using polished stones is limited only by your imagination. Once you have smoothed and polished the stones, all they need is a setting to display their beauty to best advantage. And they can lead you to a fascinating and rewarding new craft.

There are many different sides to lapidary and you may not want to be involved in all of them. But with the help of rock shops, which supply everything connected with lapidary, you can make your involvement as simple or as extensive as you like—and almost as cheap or as costly as you decide.

You can go out and collect stones yourself or buy them at a shop; you can use a tumbling machine to polish pebbles and pieces of rock till they have a permanent shine or you can buy them ready polished. You can make up polished stones into jewelry or decorative pieces, using your own bases or bought settings, which can be cheap gilt ones or expensive settings in silver or gold. The joy of the craft comes from the beauty of the stones themselves—and the part you can play in bringing this out.

Collecting rocks

There is nothing difficult about collecting rocks and stones to use for jewelry or decoration. You can get lots of fun out of it without knowing anything about geology and without carrying masses of 'prospecting' equipment. In fact, you can regard collecting the way some people look at golf—a sensible excuse to take a good walk in pleasant surroundings.

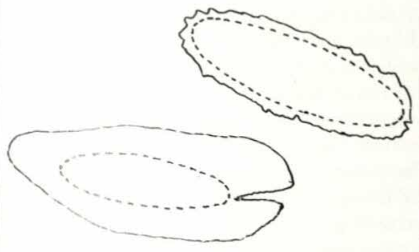
'Rockhounding', as collecting is often called (novices are sometimes known as 'pebble pups' by analogy), can be an ideal family activity. Obviously, children should not be allowed to scramble around potentially dangerous cliffs by themselves. But collecting pretty pebbles from beaches is right up their street.

Where to look for stones

Beaches are the easiest place to start since all you will have to do is to walk along with your eyes open.

Pebbles you find on the beach will usually be in a fairly smooth state, as the ocean will have worn away sharp edges already—this makes it much easier to convert them into stones for jewelry since you may have to do little more than to remove superficial cracks and add a final polish.

Be selective when you pick the pebbles and discard badly damaged ones—you should be able to find lots more and stones with large cracks will need that much more work at later stages, when you tumble them smooth and add a polish (fig.1). If a pebble is smooth when you pick it up, you can get a good impression of what it will look like when polished by dipping it into water. The polishing process, which is described in the next chapter, gives the pebble in its dry state the same shine which it has when wet.

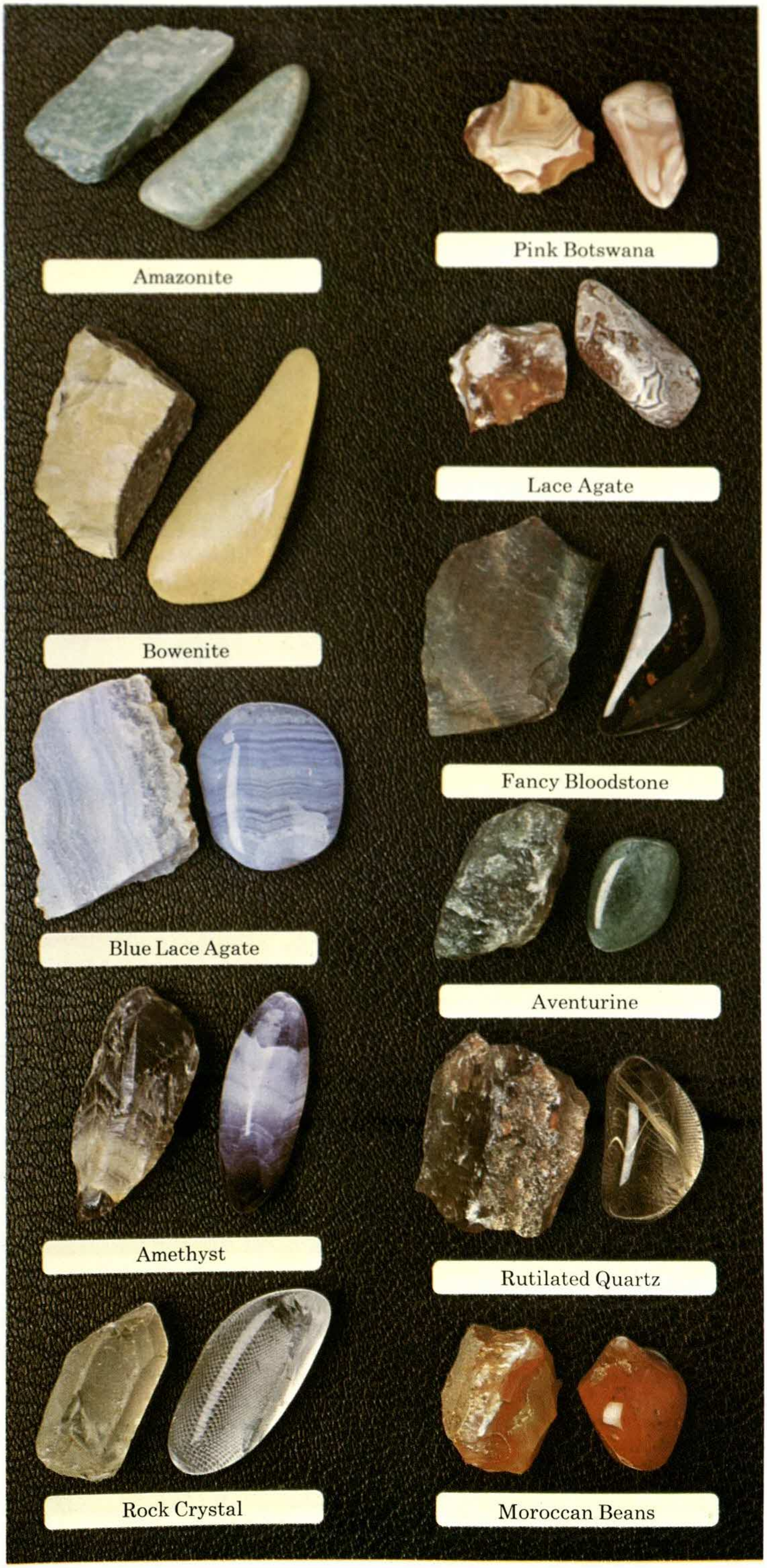


1. *As the diagram shows, pebbles with deep cracks are not worth keeping; too much is lost when smoothing.*

Streams can also be fertile hunting grounds, if their banks or edges have pebbles along them. The beach near where a river empties into the ocean can be a particularly valuable area, as the river may have swept pebbles downstream from deposits inland. If you find interesting pebbles near a river mouth, try borrowing a technique from the old gold prospectors and searching back upstream for the original deposits of rock.

Hills and mountains everywhere may provide you with the specimens you want. Stones you find here will usually be much rougher than pebbles from the beach. All this means is that they will need more smoothing. Once again, try to get regular, solid stones—you can chip unwanted edges off with a hammer and rock chisel.

Some of the best finds are made where man has already been digging into the earth and revealing the rocks from below—the slag heaps or dumps out-



Steve Bicknell

side old mines or where test holes have been dug for mines, for example. Most mines were dug by people looking for a particular ore, who will not have been interested in many of the stones that are just what you are looking for. They will have thrown them on the heap, usually just outside the entrance. The more overgrown the heap, the better from your point of view—it is that much less likely that anyone has stripped it of attractive stones. But do be careful—clambering round slag heaps can be dangerous and is not something to be done on your own.

Anywhere else where the topsoil has been removed or overturned can provide stones.

Quarries, gravel pits, cuttings and embankments for roads and railways are all places worth looking in for stones. Do ask permission before hunting on private property—few people refuse permission and the owner may even be able to tell you the best area in which to look.

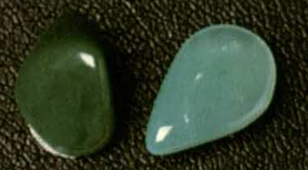
Lapidary societies

As you get more experienced, you may decide that you want to hunt for particular types of stone. You may decide to take a holiday in an area that is especially rich in certain stones. For detailed advice as to the best areas near you (or where you will be holidaying), consult a rock club or lapidary society. Your local library will probably be able to tell you where to find a club, or to direct you to one of the specialist magazines, where you will find details of exhibitions and shows, as well as advertisements for the large suppliers of equipment and stones.

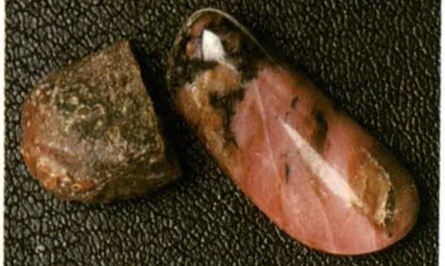
You will not find every kind of stone near your home, however well-endowed the area in which you live. Rock shops have stocks from all over the world and it is a good idea to consult them and supplement your collection from their resources. But there is a special satisfaction in using the stones you have found yourself.

Equipment

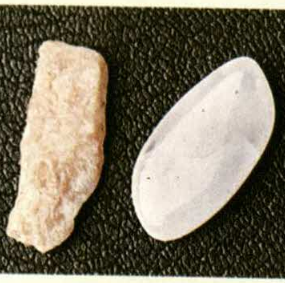
What equipment you take with you when collecting depends on the terrain you will be covering. The most basic item is proper footwear—tennis shoes or waterproof boots for beaches or river banks; sturdy hiking shoes or boots for mountains or rough country. Other standard hiking or picnicking gear is appropriate, particularly if you intend to make a day's excursion of the hunt—hat, sunglasses and gloves (depending on the weather), food and drink. Try not to take too much, as you may find that your bag becomes remarkably heavy on the homeward stretch, carrying a load of stones.



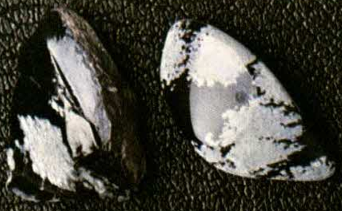
Chrysoprase



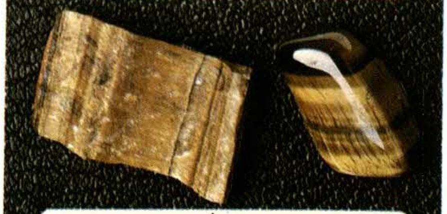
Rhodonite



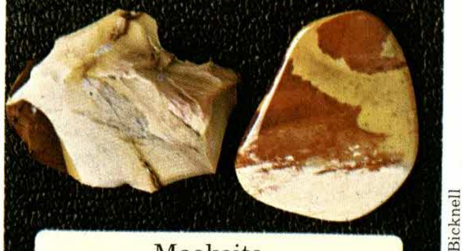
Rose Quartz



Snowflake Obsidian



Crocidolite (Tiger Eye)



Mookaite

Steve Bicknell

The basic rockhound equipment is very simple—a canvas knapsack or strong plastic bucket to hold your stones; a penknife with a strong blade; a small steel file; and some plastic bags. The knife and file are useful to determine how hard the pebbles are, and the plastic bags for keeping pebbles of different hardnesses apart. This separation becomes necessary when you begin to smooth and polish the stones as it is essential not to polish soft and hard pebbles together.

If you are heading for the beach you need nothing more. But for rougher country, where the rocks will be more jagged and broken, you will need some extra equipment—a rock hammer, with a chisel- or pick-end for chipping pieces of interesting stone from larger rocks; a rock chisel and heavy crack hammer for harder chipping—these are similar to their carpentry namesakes, but specially made for harder duty; and safety goggles to protect your eyes from flying fragments.

If you are going to become a serious collector then you will need a full set of tools, including at least two chisels (a second can be useful if the first is stuck in a crack) and a variety of hammers. But one good rock hammer with a chisel-end will do if you are starting out. You will miss some finds but still be able to chip out the more accessible pieces.

Classification of rocks

It should be stressed that a knowledge of geology, apart from a general understanding of Mohs' scale of hardness (see below), is not necessary to enjoyment of lapidary. It can, however, provide a fascinating adjunct, especially to collecting, and it may be useful to clarify some terms.

All rocks are classified in three broad groups, according to the way in which they were formed.

Igneous rocks form when molten lava, which flows from volcanoes, cools. Examples of igneous rocks are granite and basalt.

Sedimentary rocks are formed from minerals deposited on land or in shallow seas, then compacted and hardened by extreme pressure. Limestone, shale and sandstone are sedimentary rocks.

Metamorphic rocks are either sedimentary or igneous rocks that have changed form, because of the heat and pressure that occur below the earth's surface, or by chemical action. Slate, marble and gneiss are metamorphic rocks.

The most likely type of rock to find gems in is igneous rock, but this is by no means a hard and fast rule. Even sedimentary rocks may have been partially made up from pre-existing igneous rocks, in which case they are known as clastic rocks. There are no simple rules for collecting success, but keep an eye out for granite outcrops.

What are rocks made of?

All rocks are made of minerals. Some minerals consist of only one element, like diamond which is carbon, but most minerals are chemical compounds, like quartz which is silicon dioxide. More than 2,000 minerals exist, but only a dozen make up 90% of all rocks.

Quartz is the most common of all minerals and most of the stones you will handle consist of quartz. It occurs in two forms, crystalline quartz, which is found as smoky quartz or quartz crystal, and crypto-crystalline quartz (also known as chalcedony which is confusing, as a specific stone is sometimes called chalcedony too). Crypto-crystalline quartz includes the agates, flint, chert, jasper, cornelian and most of the rocks used in lapidary.

How specimens are formed. Silicon dioxide, which chemically is quartz, exists in liquid form, with various impurities, throughout the earth's surface. While rocks are being formed, this liquid, as well as solutions of commercially valuable ore, can fill hollows in the earth's crust. There they solidify to form deposits of quartz and other minerals and pins. Interesting deposits may be found beside veins of ore, since they were formed in the same way, and be brought to the surface when the ore is mined, only to be discarded as waste by the miners. The liquid can also fill the cells of buried organic matter, such as wood, in which case it may retain the pattern of those cells when it solidifies—this is how petrified wood is formed.

The variations in colour between, for example, different agates, are caused by different impurities in the forming solution. Iron in the solution will colour the rocks red, yellow or brown; chromium will make the rocks green.

Mohs' scale

This is an index of hardness devised by a German mineralogist, F. Mohs, in 1812 and still widely used today. He arranged ten minerals, which he numbered, in order so that each will scratch any mineral lower on the scale and be scratched by any mineral higher on the scale than itself. The ten are:

1. Talc — very soft
2. Gypsum
3. Calcite
4. Fluorite
5. Apatite
6. Orthoclose
7. Quartz
8. Topaz
9. Corundum
10. Diamond — very hard

It should be noted that this scale only measures relative hardness—diamond is not twice as hard as apatite, but more like seventeen times as hard.

Nor is every piece of quartz you find going to be exactly as hard as every other piece. But the scale is a convenient tool and if a rock is described as, say, of hardness 6½, you know it is a little softer than quartz.

Using Mohs' scale. When using a tumbling machine to smooth and polish stones, it is vital not to mix soft and hard stones; or the soft ones will be completely worn away before the hard ones are smooth. Very soft stones will not polish well and will not wear well as jewelry. So separate stones as you pick them up.

It is possible to buy hardness points tipped with the actual minerals used in Mohs' scale, but such accuracy is not needed. A copper coin has a hardness of about 3, a penknife blade about 5½ and a steel file about 6½. Carry these with you when collecting and you can test hardness on the spot.

If your coin will scratch the stone, it is too soft for use. If the coin will not but the penknife will, the stone may be polished with care; put it in a bag with similar stones. Use other bags for stones that the penknife will not scratch but the file will, and for those that even the file will not scratch. Be sure that you are testing the stone itself, rather than an outer layer of dirt or lime coating.

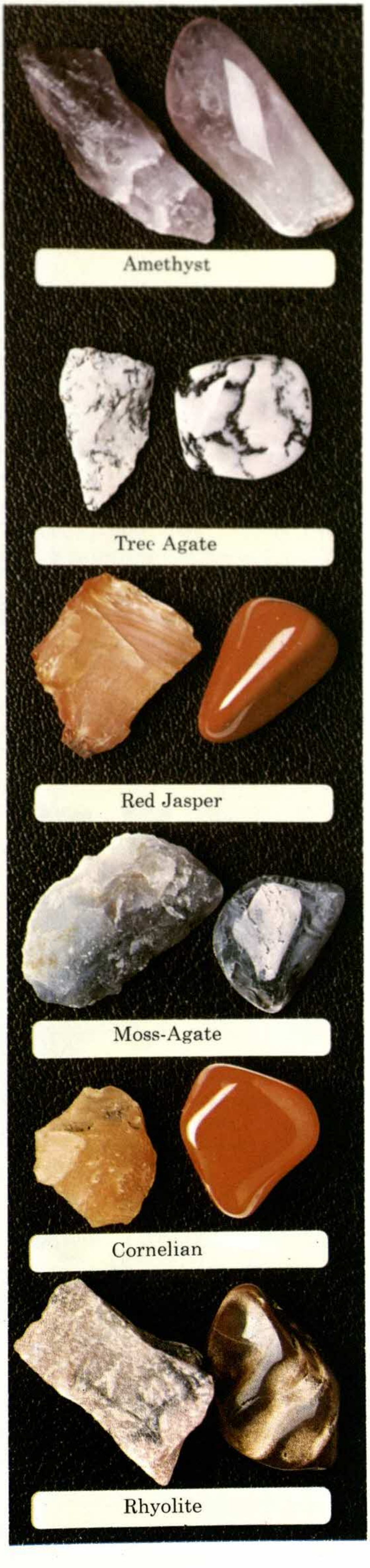
Warnings

The possible dangers involved in collecting pebbles and rocks are really no more than the possible dangers of any country walk. But you must be careful that you do not get so engrossed in the hunt that you forget to take ordinary precautions.

Watch out for tides if you are on the beach, especially in an area you don't know well. Beware of potholes and other concealed holes, especially near disused mines or quarries. Never go into an old mine—the shaft will probably be shored up with timber which may be rotten. Beware, too, of slag heaps which may be unstable and collapse.

If you are going for a long hike in uninhabited country, tell someone where you are going, take a good map and compass—and learn how to read them.

If you are going to break rocks, goggles are a must to protect your eyes from flying chips. Never use carpentry tools, which are designed for use with wood and may splinter on stone.



Amethyst

Tree Agate

Red Jasper

Moss-Agate

Cornelian

Rhyolite

The hues of semi-precious stones are even more vivid when polished and their shape more subtly defined.

Working with repeat patterns

Design know-how 9

If you want to build up a pattern by repeating a motif, you must work out just where to place the repeated motifs for the best effect. You can do this by remembering a few simple hints and using a grid to work out the design. The principle behind this is appropriate for any technique that may use repeated motifs—for printing with potato cuts or other objects, for example, or for appliqué work or painting with stencils.

Before you decide on the whole design you must consider the motif you will be using. If the motif is an interesting and attractive design in itself, then the effectiveness of the overall pattern will be reduced by crowding too many motifs into a small area—each motif will need space around it to show it to best advantage. If, however, the repeated motif is simple, the effectiveness of the design will depend on the cumulative effect of the motifs and the patterns of the lines that they make up; so they should not be too far apart or they will obscure the overall flow of the design.

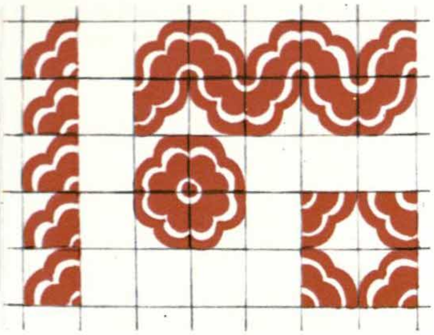
The way that you use the motif can be made more complicated if the motif has a shape (such as a semi- or quarter-circle) that can be reversed and combined with itself to make one larger shape (fig.1). You may choose to position a series of repeated motifs in clusters, leaving space between the clusters to set them off (fig.2). Or you may use two different motifs in combination—or different colours.

These principles of spacing can still be relevant if you want to achieve a 'primitive' or random effect, making abstract patterns. For this, exact positioning of the shapes will not be your aim, but do try out your idea first on a spare piece of paper.

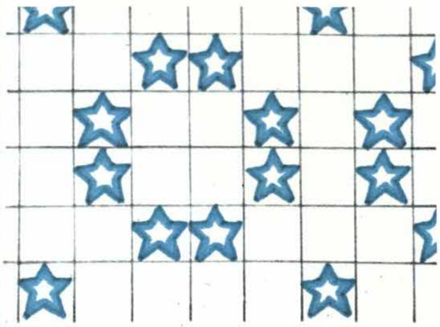
To decide what kind of grid you want to use as the basis for a regular design (figs. 3-6), lay a sheet of tracing paper over graph paper. Draw in the design, in miniature if appropriate, using the graph paper to suggest grid lines. Using tracing paper in this way has the advantage that you can lift it off and see what the design will look like without the distracting lines which fill up the spaces.

To save continually drawing in and erasing the motif shape, try cutting it out of a piece of paper folded several times. If you are designing in miniature, cut out the shapes to scale. Move the pieces of paper around till you find a pleasing pattern. Finalize the grid around the pieces of paper.

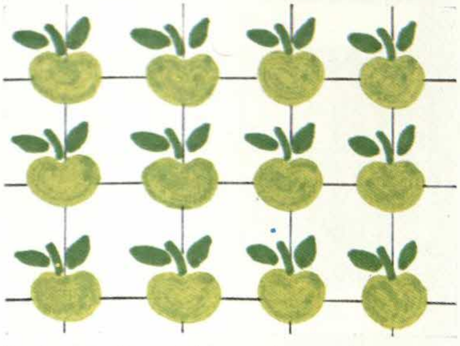
When you have decided on the grid, enlarge it if necessary (see Design Know-how chapter 4, page 112) and draw it on to tracing paper. Transfer the pattern to the surface to be decorated by pricking holes through the tracing paper with a pin at the relevant intersections of the grid lines. Lay the tracing paper over the surface and dust through the holes with chalk or a soft pencil (if this will not leave a permanent mark). Use these chalk or pencil points as the guide to show you where to position the motifs.



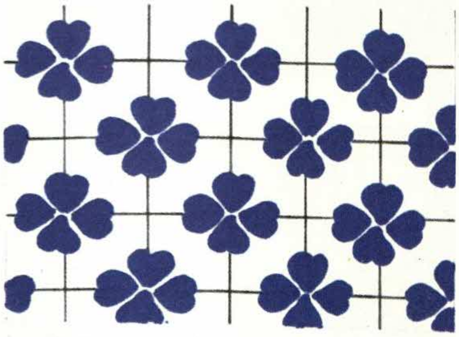
1. *Some motifs, like quarter-circles, will build up into various motifs, positioned horizontally or diagonally to give multiple patterns.*



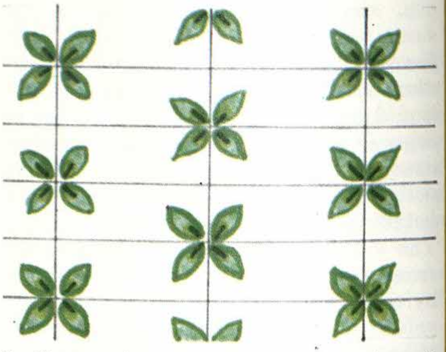
2. *Motifs grouped to make up large clusters which are then repeated, using, say, every sixth line of the grid as the grid for repeating the cluster.*



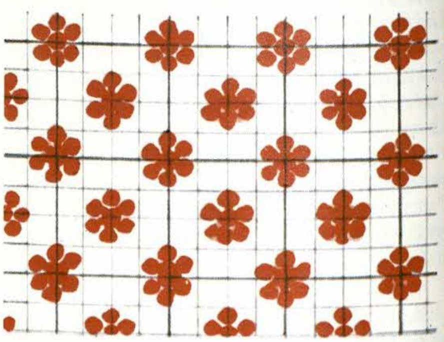
3. *A simple grid is made up of squares of a size appropriate to the motif. Put the motif at each point where the grid lines cross for a regular pattern.*



4. *With a simple square grid, you can achieve a diagonal, trellis effect by using alternate intersections, in both directions.*



5. *By spacing the horizontal and vertical lines differently—so the grid forms rectangles, not squares—you can vary the angle of the diagonal lines.*



6. *If you are working on graph paper you can still achieve the 'stretched trellis' effect by choosing different spacings along the square grid.*

Joy Simpson

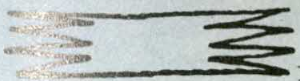
Creative ideas 9

Ribbon cornflowers

Self-adhesive gift wrap ribbons make distinctive trimmings easier to achieve. These delicate cornflowers are the product of a few lengths of bright ribbon—and a bright idea.

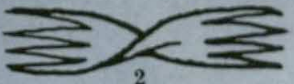
To make several cornflowers you will need:
1 roll of blue and 1 roll of green 2cm ($\frac{7}{8}$") wide self-adhesive gift wrap ribbon.
Pair of sharp scissors.

Making the flower head. Cut 8 strips of ribbon 10cm (4") long and cut each end into points (fig.1).

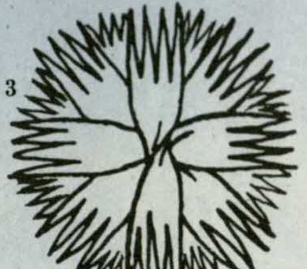


Kate Simunek

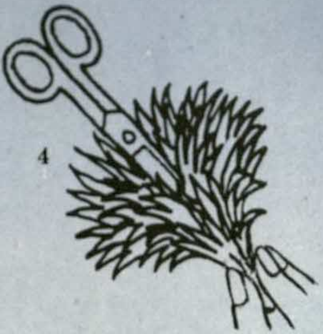
Take two strips, moisten and twist each in the centre (fig.2), moisten each centre again and stick together to form a cross.



Repeat with remaining strips. You will then have 4 crosses; moisten each in the centre and stick together one on top of the other to give a flower shape (fig.3).

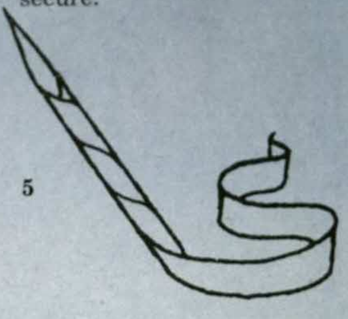


Now place the point of the scissors at the centre of the flower and gently squeeze the flower up around the scissors(fig.4).



Cut a piece of green ribbon 8cm ($3\frac{1}{2}$") long, trim one end to a point and moisten the rest of the length.
Wind this tightly around the flower base, positioning the pointed end at the back of the flower to form a leaf.

Making the stem. Cut a piece of green ribbon 20cm (8") long, trim one end to a point and twist the rest of the ribbon into a tight tube (fig.5). Moisten each end to secure.



Joining flower and stem. Cut another 8cm ($3\frac{1}{2}$") strip of green, point the end, moisten the rest and, holding the flower and stem together, wrap it tightly around the join, arranging pointed end round flower to form another leaf.

Ribbon cornflowers—to trim a parcel or pop in a vase.

Alasdair Ogilvie

Creative bottle chopping

Glass 2

What a waste it is that so many good-looking bottles are non-returnable and often seem destined for the dustbin once they are empty. And yet think how many things you could make from bottles, if you could slice them. The bottoms of bottles make ashtrays; a bottle with just the top cut off makes a vase; stubby bottles can be corked and made into storage jars; Chianti bottles convert into hanging baskets—your imagination is the only limit, except that you should not attempt to make drinking glasses, just in case the final edge of the break is not perfectly smooth.

The method for cutting bottles is very simple, and the raw materials, once you have a cutter, are free. Any bottles will do—but please do not use returnable bottles, which should always be returned to the store where they were bought.

Virtually all wine bottles are non-returnable, and some of them are extremely handsome; many soft drinks and some beers come in non-returnable bottles. You can use your own, or try asking a restaurant or bar if they have bottles to spare; they will probably be glad to get rid of empties.

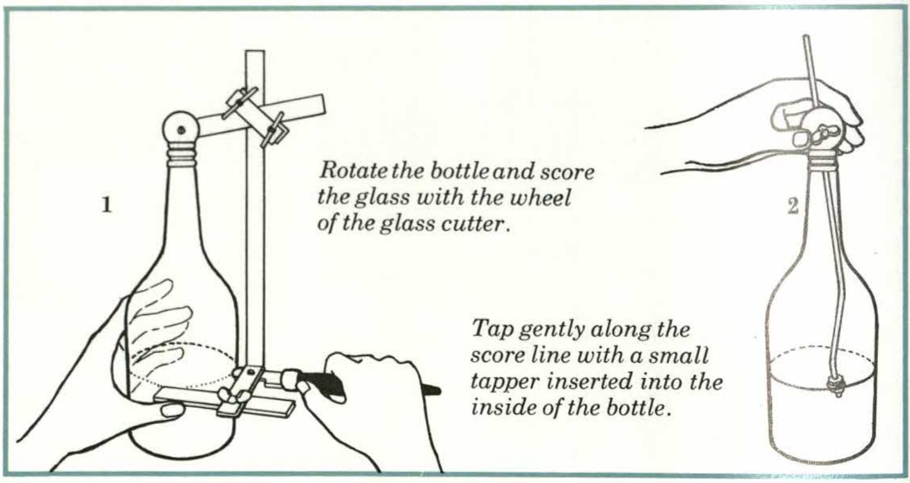
Tools

The only essential tool is an adapted glass cutter. A glass cutter does not actually cut glass itself; rather, it marks a score line along a sheet of glass, which weakens the glass along that line. So, when you put stress on the glass (with sheet glass, usually by bending it), the glass fractures along the line you want.

The score line is made by a small wheel with a sharp edge which is drawn, quite gently, along the glass. The tip of the wheel can be made of industrial diamonds, which will last practically forever, or of toughened steel. Steel ones are much cheaper and quite adequate for home use—one wheel should mark a hundred bottles and replacements cost next to nothing.

The cutter to be used on bottles has to be adapted to make sure you can draw a regular line around a bottle. You could rig up a gadget yourself with an ordinary glass cutter, or you can buy appropriate tools under such manufacturer's names as 'Bottle Chopper'. The manufactured brands use various techniques to position the cutter. Some involve laying the bottle on its side over a vertical cutter; others provide a base and vertical pole with which to position the cutter.

The cutter shown (fig.1) works by suspending the cutter, via a pair of metal rods in a cross shape, from the top of the bottle. The two rods are clamped together and, by loosening the clamp and adjusting the rods, you can position the cutter so that it is horizontal and exactly where you want to cut the bottle. A guide bar is fitted next to the cutter to help keep it in position as you rotate the bottle.



Rotate the bottle and score the glass with the wheel of the glass cutter.

Tap gently along the score line with a small tapper inserted into the inside of the bottle.

Barbara Firth

The technique is easiest on straight sided, round bottles. Start with a couple of bottles of no great interest, till you have mastered the knack. Before cutting soak off any labels, as they will interfere with the cutting wheel, and clean the bottle.

Fix the device in position, so that the cutter is horizontal and just touching the bottle. Press both cutter and guide bar gently against the bottle and slowly turn the bottle. Don't press hard or you will get a messy break and wear out the wheel quicker. There should be a barely audible scraping sound as you turn the bottle and a very thin score mark where the cutter has been.

Carefully turn the bottle around once. Make each movement as long as possible, to minimize stopping and starting. Don't go over any part of the score line twice, but make sure that the line is continuous. As soon as it is, this stage is done—with practice, it only takes a matter of seconds.

Separating the bottle

There are two methods by which you can put stress on the glass and make it fracture along the score line. Using a tapper or using hot and cold water.

Using a tapper. All this means is that you insert a small hammer into the bottle and tap gently along the score line, from the inside, till it breaks.

The tapper must be adjusted so that it is positioned exactly level with the score line—it is held in place by washers at the top of the bottle (fig.2). Force is quite unnecessary. A few soft taps at the same place will produce a visible crack. Then tap all round the bottle, tapping about 1.5cm (½") ahead of the crack, until the crack goes all the way round. If the bottle does not separate, look to see where the crack is not complete and tap there again.

For some bottles, especially odd-shaped ones, you will not be able to touch the score line with the tapper. For these, use the other method.

Using hot and cold water. This method involves a little more care and patience than the tapping method, but will produce a cleaner break and can be used at times when the tapper is impracticable.

Fill the bottle with hot but not boiling water—adding a cup of cold water to a recently boiled kettle should do.

Leave it to stand for about a minute, so that the water warms the glass from the inside. Then rotate the bottle underneath the cold tap, which should be running on the score line as far as possible. Hold both top and bottom of the bottle firmly while you do this. It will probably not separate first time, but you should see a crack mark appearing, especially if the glass is thick. If the water in the bottle is still hot, top it up if necessary, let it stand again and then repeat the process; if the water has

Steve Bicknell

cooled, repeat the process from scratch. Only trial and error will tell you just how hot the water should be and how careful you have to be with the bottle. Always hold it as close to the bottom of the sink as possible, to minimize the risk of fragments of glass ricocheting dangerously. This is unlikely, as the glass will almost certainly break along the score line, but if you are not prepared for this, the sudden break may surprise you into dropping the bottle.

Finishing

However clean your break, there will be rough edges and you must file these down before using the glass objects. Do this with wet and dry silicon carbide paper or stone, available for the purpose from most hardware stores.

The paper, which is similar to sandpaper except that it is rougher (silicon carbide is an extremely tough material), is best used with a little water. Use a coarse grade first and then smooth with a finer grade. Brush the grains of glass carefully into a bag for disposal, using a brush *not* your hand.

The stone is a block of the silicon carbide, in effect rather like sandpaper wrapped round a block of wood.

The shape and colour of the bottles can suggest possible uses; here are some examples: a bowl, a spice jar and several vases—smooth and shapely and ready to use. Using a bottle cutter you can make attractive, inexpensive and practical presents. Designed by A. T. Lee & Co.

Careful finishing is essential as jagged edges can be dangerous. Do not attempt to drink from a cut bottle, just in case there are grains of glass in what seems to be a smooth surface.

Square and oval bottles

These are rather more tricky than round bottles, as the method given will not give you a horizontal cut. Because of the shape of the bottle, you will get a curved cut, which can look very attractive. It does, however, mean that the stress line will be irregular and you may not get a good break—but the principles are the same, it's just a little more tricky to break and smooth the bottles accurately. But the results can be well worth it. Use your imagination and try cutting a bottle you like for whatever use you think it may be suitable.

Safety hints

Do be careful at all stages of the proceedings, especially on your first attempts when you are not too sure of what you are doing. There may be a little glass powder produced when scoring, so do this over a piece of newspaper, which you can wrap up carefully and dispose of.

When tapping, there is a slight chance of sending a chip of glass flying, especially if you do it too hard, so it is best to wear protective goggles.

When cracking the glass under the tap, wear rubber gloves to protect your hands.

All these are sensible precautions that you should remember. Familiarity with the process may breed contempt, as you find out how easy it is; but always be aware of the possibility that glass can splinter and cut, especially if the bottle you are using is faulty—and faults are not always visible.

Modelling simple animals

Clay 6

Modelling birds, animals and fishes provides excellent practice in working to scale with three-dimensional shapes. The basic rule to remember is that the shape must be simple; although animals have a complex structure, you can only see an image—the basic outline and mass.

With this in mind, decide on the creature to be modelled, and start by making a few sketches to determine the out-

Johnnie Ryan

lines and essential features. You can do this by looking through books on animal and bird life, or by watching your domestic pets. If you feel like working on something more exotic, try taking a sketch pad along to the zoo.

Animals can be modelled naturalistically, or to give an abstract impression. Decoratively, you can take care to represent fur and feathers as they actually appear, or you can make a stylized piece by applying colourful patterns. Almost any technique of working clay can be employed as you become more adept, from simple pulling and pinching to hollowing out a solid form, coiling or even building up from components thrown on a wheel.

Small, simple creatures

Small animals and birds, say no bigger than a man's thumb, can be made simply and easily by rolling small clay balls in the hand, and then gently modelling them with the fingers.

Try making a few small things first to get the feel of an object in the round—some birds, a tortoise, gerbil or fish. Don't complicate the shapes—aim for a positive, simple image.

Fish. Roll the clay in the hands until it is smooth, shape it with the fingers then tap it flat with a ruler or piece of wood. When the clay has hardened, incise eyes, fins and scales with a pin, or paint them on when the clay is completely dry.

Angel fish look particularly good made in this way—they can be painted in natural stripes, or in bright, decorative colours to compliment the shape.

Tortoise. Keep the basic shape of the clay lump fairly round. Flatten it slightly on top, then moisten the fingers and pull the clay gently between the thumb and first finger to form a small head. Work quickly, and try to keep a fresh, tactile quality in the clay. If you prefer a naturalistic look, paint the clay when it is hard in natural browns and ambers to give a shell-like effect. Or be fanciful, and paint a bright blue tortoise with one or two flowers on his back.

Making bigger models

When you come to try a bigger model, the basic rule of simplicity still applies, but there is an added consideration in that the clay must be hollowed out.

Unless it is, models made in self-hardening clay will not dry out evenly and will warp, and if real clay models are eventually to be fired, they will crack and explode unless the central mass is scooped out.

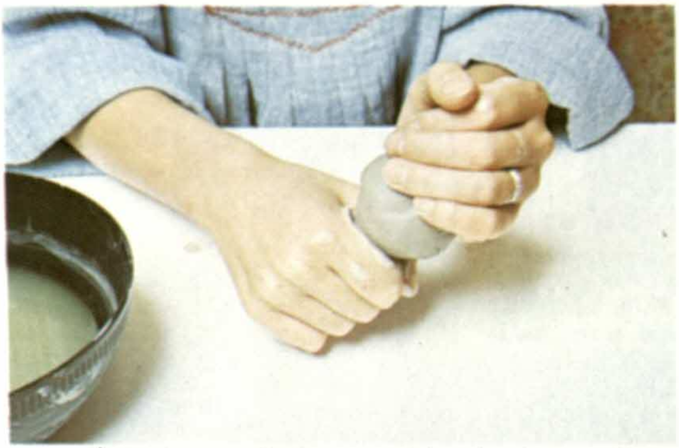
When the model is complete, allow the clay to stiffen until it is of the same consistency as cheese. Then turn the piece upside down, and hollow out the body with a looped modelling tool.

Continue hollowing until an even wall remains, thick enough to support the shape of the animal.

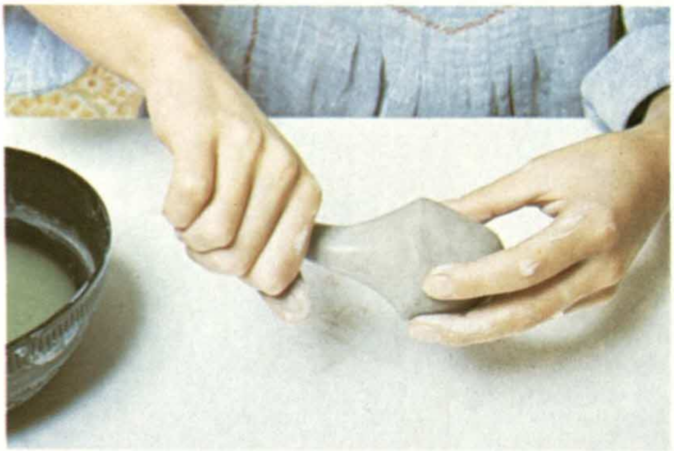
Left. The shape of each of these birds is simple, and they are decorated so that colour and pattern accentuate the rounded form with shiny glaze or stylised, curving flower designs. Plain birds designed by Stanislas Reychan, flower painted birds from Mexico.

A tiny tortoise can be made by simply pinching a ball of clay in the fingers. Painted in bright colours and decorated with a flower, initial or motif, small models like this are very decorative. Designed by Val Barry.

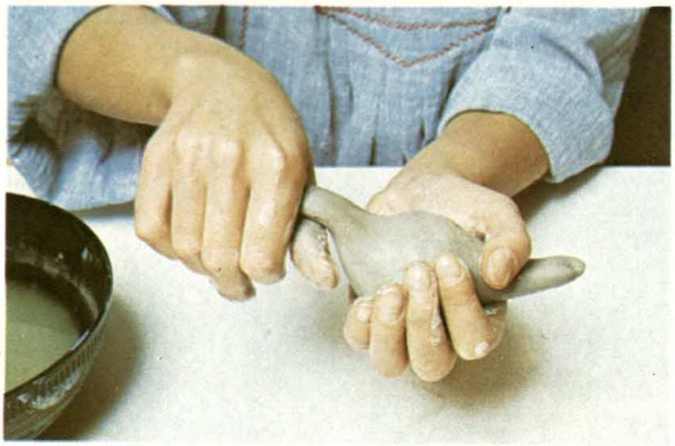
Below. For the smooth lines of this bird the clay is gently 'stroked' with a slow steady motion.



1. *Stroke clay between the fingers and thumb to form a tail.*

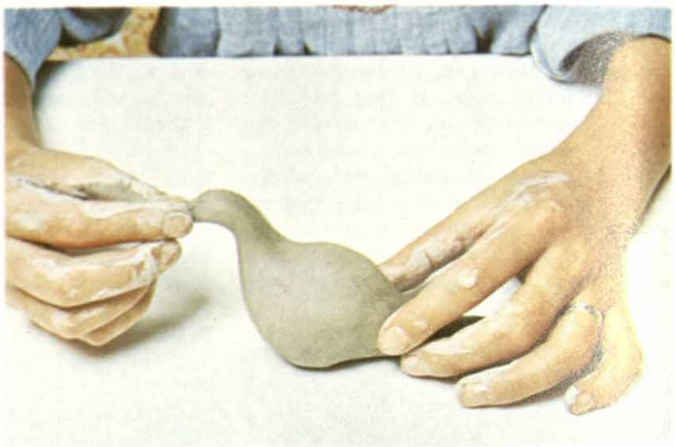


2. *Continue pulling the tail to the required length.*

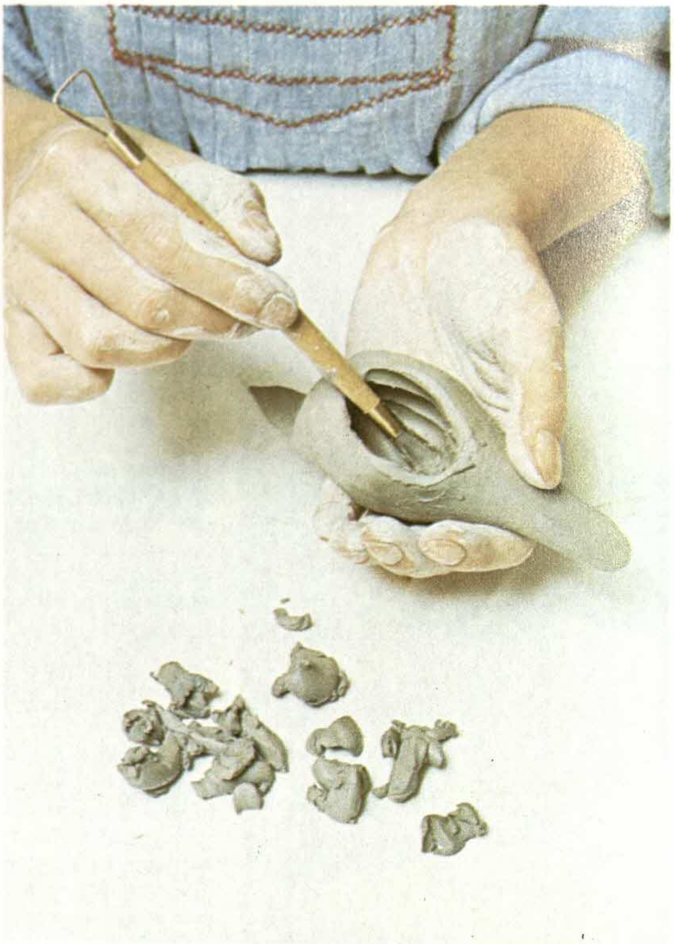


Nelson Hargreaves

3. *Pull the other end to form head and neck and finish off downward curve of the head between the thumb and fingers.*



4. *Pinch the beak between the thumb and forefinger.*



5. *Finish off the bird by scooping out the body with a looped modelling tool to prevent warping and cracking.*

Mexican bird. Start with a lump of clay a little bigger than a tennis ball.

☐ Moisten the hands, and hold the ball of clay in the left hand.

☐ With the right hand, stroke the clay, squeezing and pulling it downwards between the heel of the thumb and the first finger until you have pulled a tail about 5cm (2″) long (figs.1,2). Keep the clay moist, or it will break as you pull.

☐ Now turn the clay upside down, and pull the other end to form the head. This time pull to the side and down to form a good curve for the head and neck (fig.3).

☐ Make the beak by pulling gently between the tip of the thumb and first finger (fig.4).

☐ Allow the clay to stiffen and hollow the piece out (fig.5).

☐ When the clay is quite dry, paint it with stylized impressions of flowers and feathers in soft, pretty shades on a pale base colour. Finish off with a coat of clear glaze if required.

The penguin can be made in the same way as the Mexican bird. Start with a lump of clay a little bigger than a tennis ball, keep the body oval and pull a round head and beak on top.

☐ When the clay is stiff, cut the body part of the penguin in two horizontally by slicing through it with a cutting wire.

☐ Hollow out these two halves. This will give a base which would also make a good egg cup with a lid.

☐ Pinch out some thin pieces of clay

Simple but effective—a clay 'sausage' crocodile. Designed by Dennis Gay.

to form wings, and fix these in position by scoring the surface of the clay with a wet toothbrush and pressing the wings into place.

☐ Make some feet in the same way, and fix them firmly at the bottom.

☐ Make sure at this stage that the piece is balanced and will stand upright.

☐ The finish here is a naturalistic one. Penguins are smooth and silky, so make sure that your piece has a clean finish. If necessary, lightly sponge the surface of the clay with a damp sponge until it is even.

☐ When it is dry, paint it black with a white bib. If a more shiny effect is required, paint the penguin with clear varnish.

The crocodile. Roll out a coil of clay about 40cm (16″) long and 15cm (6″) in circumference at the widest point, making it thicker in the middle and much thinner at both ends, with the tail end thinner than the head end. If you keep the scale of the crocodile small, so that the clay is not very thick, you need not hollow it out.

☐ Broaden the centre part of the coil slightly by tapping it with a piece of wood or a ruler.

☐ Model the head by squeezing the clay between a moistened finger and thumb to form the neck, nostrils and eye sockets.

☐ Roll small balls of clay to form the eyes, moisten the sockets and press the eyeballs firmly into place.

☐ To form the mouth, slice the coil horizontally with a cutting wire so that the coil is cut in two at the front of the head. Gently separate the two halves and keep them apart by wedging a small piece of clay in the opening. Keep this in place until the clay is very stiff but not dry, and then remove it.

☐ Make sure that there are no cracks at the jaw line. Smooth away any that do appear with a moistened fingertip.

☐ Model a sharp, curved tooth and stick it firmly in place in the lower jaw by moistening both surfaces and pressing them together.

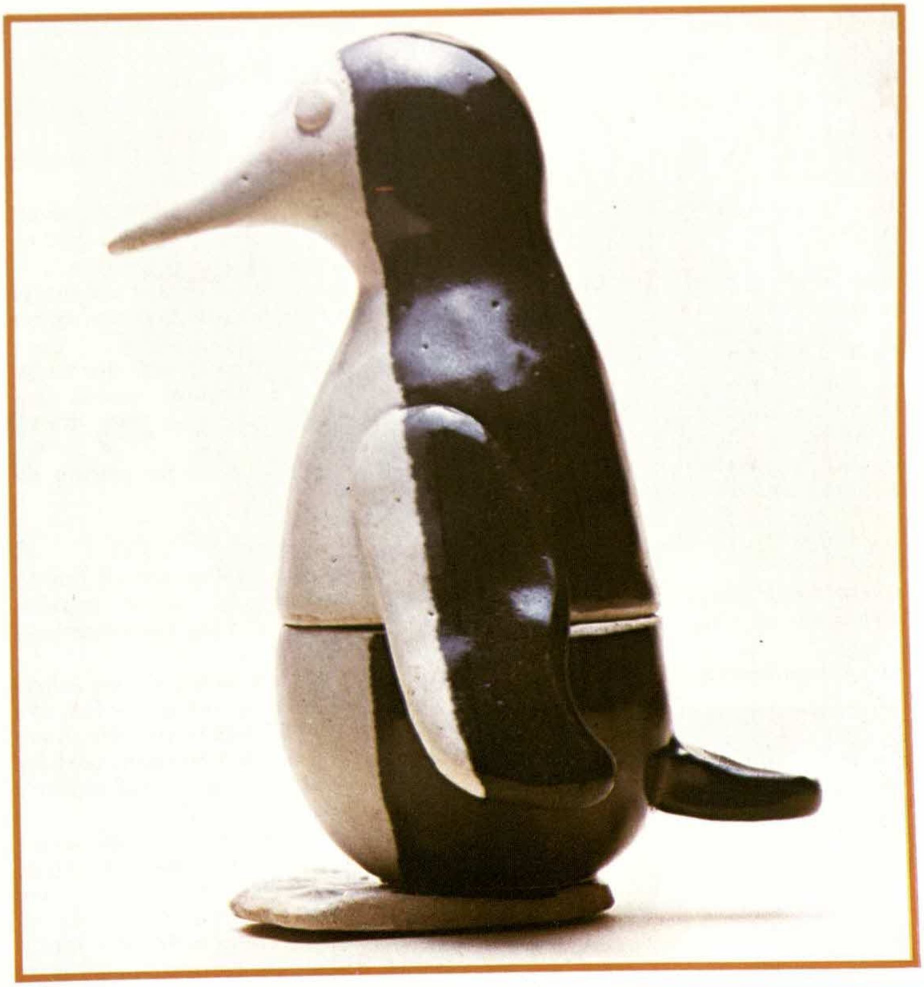
☐ Roll out small coils for the feet. Flatten them out, and incise the ends with a modelling tool to form toes. Attach these firmly to the sides.

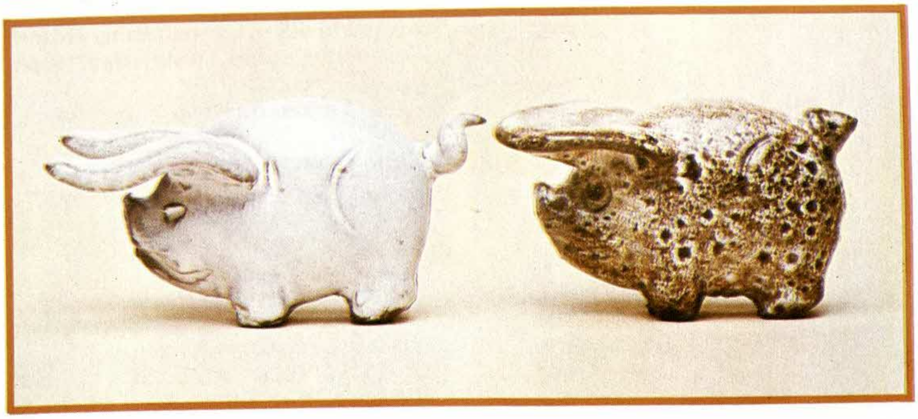
☐ When the crocodile is hard and dry, scratch the skin markings with the point of a sharp knife.

☐ Finally, paint him in bright colours.

Centre right. A glossy penguin made from a ball of clay, sliced in two and hollowed out. Designed by Dennis Gay.

Right. Two small pigs, given extra character by their expressions and ears and tails. Designed by E. Castro.





Johnnie Ryan

Introducing straight stitches

Yarn — embroidery 1

Embroidery is as much a craft for today as it ever was. Modern dress designers now use stitchery both in lavish *haute couture* ways and in entertaining, charming motifs for everyday clothes. Modern embroidery designers continue to invent new and exciting combinations of colour, texture, stitch and pattern for panels which may be used decoratively or practically.

In addition, there is a re-appraisal of the traditional roots of embroidery in folk art throughout the world. Go into your local museum, seek out the rooms showing embroidery, costume and tapestry and you will discover a rich legacy of inspiration.

Fabrics

Any fabric can be used for embroidery, but for a novice fine evenweave fabric is the easiest to use. It has an even number of vertical and horizontal threads per square centimetre (inch) and, because the threads can be counted easily, each stitch can be made exactly the same size. Small motifs can be worked on any fabric because, as they are done quickly, the tension and size tend to be constant. However, you need not always use an evenweave fabric for embroidery—many linen, cotton and rayon dressmaking and furnishing fabrics are easy to use.

All the simple motifs in this chapter are worked in two strands of six-stranded cotton.

For trace patterns see overleaf.

Camera Press

Needles

A basic range of needles will enable you to cope with any yarn or fabric.

Sharps needle, medium length, small eye—for sewing with sewing thread or a single strand of stranded cotton.

Crewel needle sizes 6-8, long and sharp, large eye—for stranded cotton, coton à broder, pearl cotton No. 5.

Tapestry needle, blunt end—for whipped and laced stitches, canvas embroidery, drawn fabric and drawn threadwork.

Beading needle, fine—for sewing on beads.

Yarns

The yarns listed below are all fine to medium in thickness and are suitable for stitching on clothes and household linen.

All yarns which are used on fabric which will be washed must be fast-dye yarns. However, some yarns which are dye-fast are still not recommended for washing, so follow the manufacturer's instructions.

Different yarns can be effectively mixed together in the same work. Once you have worked a few stitches in one yarn it is fun to interpret them differently by using a finer or thicker yarn.

Soft Embroidery cotton, twisted, matt cotton.

Coton à broder, twisted, shiny cotton.

Stranded Cotton, 6-stranded, separable shiny cotton.

Pearl Cotton, twisted, shiny cotton, No.5—thick, No.8—thin.

Coats Drima, fine super-spun polyester, multi-purpose sewing thread.

Gütermann silk and silk buttonhole twist, both twisted, shiny silk sewing thread.

Button thread, twisted cotton.

Coats satinised machine twist, multi-purpose sewing thread.

Filo-Floss, six-strand embroidery silk.

Maltese silk, very fine sewing silk.

Frames

Embroidery can be worked successfully without a frame, but if you intend to do fine work or use long threads over the fabric then a frame is advisable. A square slate frame is the type recommended for needlepoint. For embroidery the tambour or round frame is the most popular and there are three types: a hand-held frame, a table frame with a clamp for attaching to a table or working surface and a floor frame supported on a stand. The one that clamps to the table is probably the most rigid and therefore the easiest to use. The sizes vary from about 10cm (4") to 25cm (10") in diameter. The size of frame chosen depends on the size of motifs and fabric most often worked, but one frame will do for all embroidery since the fabric can be moved to expose an unworked area.

Joy Simpson

A tambour or round frame.

To prepare a tambour frame. Remove the smaller of the two frames and wind bias binding evenly all round it, covering the wood completely. Place the fabric over the frame. Unwind the screw in the larger of the two frames so that it will fit over the smaller frame and the fabric fairly easily. Press the larger frame down over the small frame until it is enclosed.

Pull the fabric gently between the two frames until it is smooth and taut. Tighten the screw on the outside frame. The fabric is now ready to be embroidered.

If you are embroidering very fine fabric, or fabric that creases easily, first cover it with a layer of tissue paper before pressing down the larger frame. Cut away the tissue to within 12mm ($\frac{1}{2}$") of the frame.

Transferring designs

There are several ways of transferring designs but, whichever you use, the idea is to mark the outlines clearly with the minimum number of marks.

Make a beautiful blouse unique by embroidering a profusion of flowers around the yoke and cuffs. Four strands are used to give extra body to the petals.

All smiles at bed-time with a beaming Mister Moon nightdress.

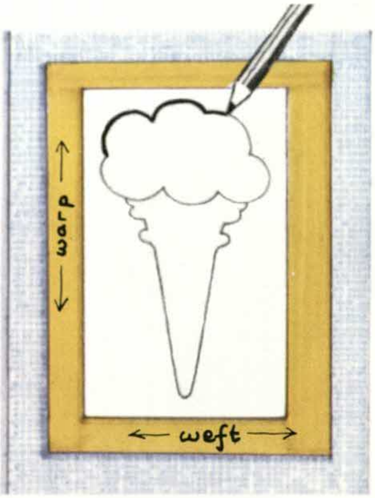
A simple dress in a plain colour is made demurely pretty with a few motifs.

Camera Press

A subtle use of an ice-cream soda motif gives this blouse a distinctive look.

For smooth fabrics use dressmakers' carbon paper or a transfer pencil to transfer the design.

Using dressmakers' carbon paper. The carbon paper is used in conjunction with a tracing wheel. Use white carbon on dark-coloured fabric and yellow carbon on light-coloured fabric. Place the fabric on a flat surface with the warp at right angles to your body (fig.2). Place the carbon, inky side downwards, on the fabric. Place the paper with the design on it on the carbon. Using a tracing wheel, or a pencil for small designs, follow the lines. The points of the wheel press on the carbon paper intermittently and give little guiding points to follow when the paper and carbon are lifted.



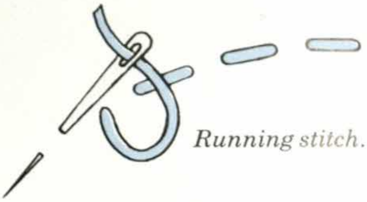
2. *Placing the design at right angles to the warp and weft.*

Using a transfer pencil. A transfer pencil is perhaps simpler to use, especially for small designs. When using the pencil use light pressure only. Draw the design on tracing paper and, on the other side, make small dots with the transfer pencil. Place the fabric on a flat surface. Lay the tracing paper on top of the fabric and press it with a warm iron. The heat of the iron transfers the pencilled dots to the fabric.

Use tissue paper for simple designs only. For fine or light-coloured fabrics it is a good idea to use tissue paper, since this protects the fabric from becoming soiled while you are working. Cut a piece of tissue paper slightly larger than the size of the motif. Lay the tissue paper over the motif and trace it on to the paper with a soft pencil which will not tear the paper. Place the tissue paper in position on the fabric and either pin or tack it to prevent it from slipping while you sew. Embroider the motif by sewing through and following the lines on the tissue paper. Tear the tissue paper carefully from underneath the stitches and throw it away.

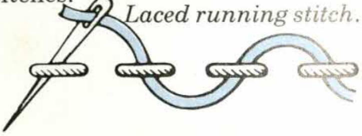
Basic stitches

Running stitch. Make the stitches on the right side the same length as those on the wrong side.



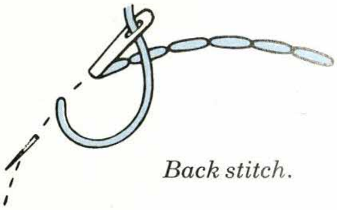
Running stitch.

Laced running stitch. This can be effective using either the same or contrasting yarn. Use a tapestry needle and thread it in and out of the running stitches without catching in the cloth. This lacing can be used with other stitches.



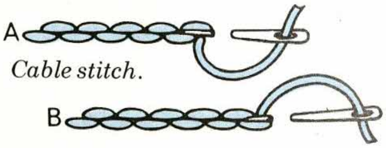
Laced running stitch.

Back stitch. Bring the needle through to the right side of the fabric and make a small stitch backwards. Bring the needle through again a little in front of the first stitch and make another stitch backwards to make a continuous line.



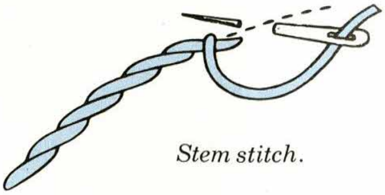
Back stitch.

Cable stitch. Work lower stitch A on line of design, as shown; then work upper stitch B in same way with yarn above needle.

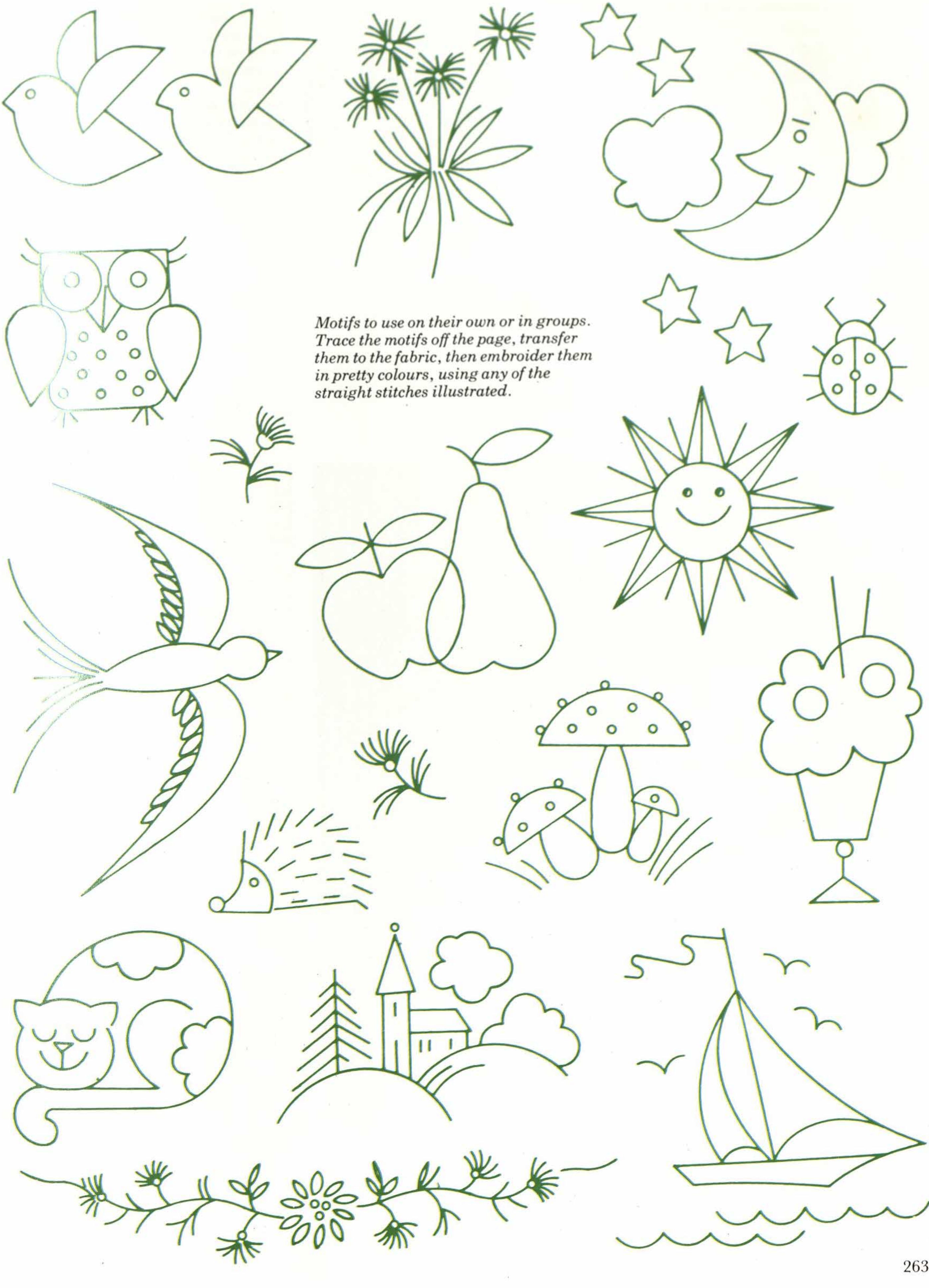


Cable stitch.

Stem stitch. Make a sloping stitch along the line of the design, and then take the needle back and bring it through again about halfway along the previous stitch.



Stem stitch.



Motifs to use on their own or in groups. Trace the motifs off the page, transfer them to the fabric, then embroider them in pretty colours, using any of the straight stitches illustrated.

Camera Press

Rectangular tablecloths

Cloth — sewing 5

This chapter covers the techniques of making rectangular tablecloths and napkins and of rounding the corners on a rectangular cloth.

Measure the length and width of the table and add on 23cm-30cm (9"-12") for the overhang on each side, or the depth to the floor if you prefer a floor length cloth. The hem allowance depends on the finish you choose—if the cloth is to have a plain hem, add another 5cm (2") to each side; allow only 1.5cm (½") for a decorative edging or for a floor length cloth. No hem allowance is needed if edges are to be frayed. This gives the length and width of fabric required.

If you use a fabric wide enough to accommodate the unfinished width of the cloth you will need only one length. But if you need to join fabric to make up the full width you may need two, or even three times the length, depending on the width of the fabric you use.

One good reason for making tablecloths is that you can buy fabric to match the wallpaper and so make a thoroughly integrated scheme.

Jerry Tubby

A centre seam looks ugly and the best method is to join panels to the main centre section as for a round cloth (see Sewing chapter 4, page 234). The main section should cover the tabletop completely so that the joining seams are on the overhang and less obvious.

Work out the width of the panels (Sewing chapter 4, page 234) before buying the fabric. Allow extra fabric for matching a pattern if necessary.

Join panels of fabric together with a plain seam or a flat fell seam (Basic sewing know-how, page 15) making sure that the pattern matches along the joins.

To make a feature of the seams, cover them with braid or ribbon, as described for braiding the seams of circular cloths.

Making the hem. For a plain hem on a cloth with 23cm-30cm (9"-12") overhang mitre the corners to give a flat, neat appearance. Machine stitch the hem near the edge of the inner fold.

Trimming. There is a wide variety of trimmings available, including braid and lace, which are suitable for trimming the edges of a tablecloth.

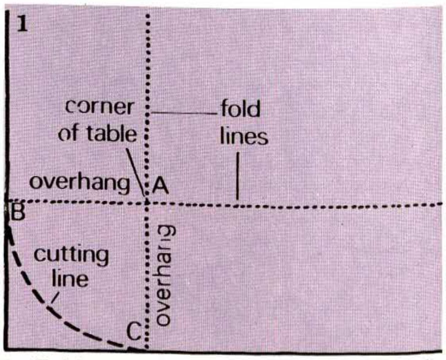
When buying trimming allow about 25cm (¼yd) extra for mitring corners and neatening the join.

On adjoining sides of the cloth, fold the raw edge 1.5cm (½") on to the right side and press. With wrong sides together, make a mitred corner on this 1.5cm (½") raw hem, so that the finished mitre will be on the right side.

Pin the trimming round the cloth, over the raw edge, mitring at the corners. Tack and machine stitch along both edges of the trimming.

Rounding the corners. Before making a hem on a floor length, rectangular cloth it is first necessary to round the corners to stop them trailing on the ground.

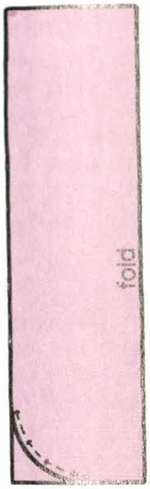
On two adjacent sides of the cloth, turn up the depth of the overhang, plus the



Coral Mula.

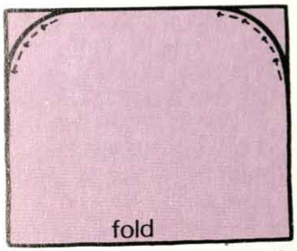
1. *Folds marking the depth of overhang on a rectangular tablecloth in preparation for rounding the corners.*

1.5cm (½") allowed for the hem.
Press and open out the folds (fig.1).
Draw an arc using the pin and string method (Design know-how chapter 1, page 28) from B-C.
Cut along the curved line.
Fold the cloth in half lengthways and pin the arc on the first corner on to the second as a pattern. Cut out second arc and remove pins (fig.2a).
Fold the cloth in half widthways and use the first two corners as a pattern for the third and fourth (fig.2b).



2a

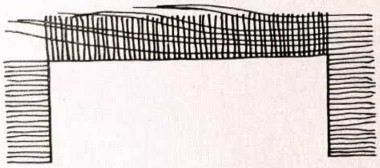
2. Cloth folded to cut arcs on the second, third and fourth corners.



2b

To make a hem on a cloth with rounded corners, snip 9mm (⅜") 'V' notches into the edge at 2.5cm (1") intervals on the curved sections of the edge. Turn in 1.5cm (½") all round the edge (including the straight edges). Finish off the hem as for a circular cloth.

To fray the edges of a tablecloth or napkins, pull away the threads parallel to the edges to the depth of the fringe required. Overcast the edges to avoid further unwanted fraying.
An alternative to overcasting is to work a line of machine stitching around the cloth or napkin, before fraying the edges, at the depth of fringe required.
Fraying works well on linens and similar loosely woven cloths but is not suitable for closely woven cottons.



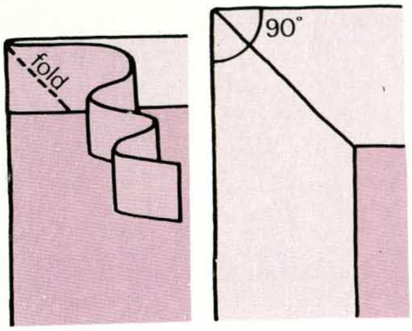
Fraying the edges.

Roger Phillips

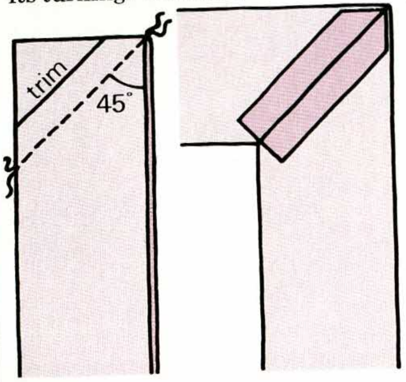
Napkins to match or contrast with your tablecloth can be made from squares of fabric. The edges can be finished with a plain hem, they can be frayed or trimmed with braid as shown here.

Mitring

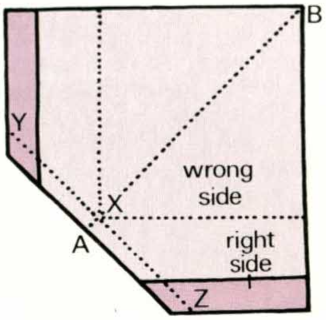
Folded mitre. Used mainly on braids (always on plaited braid which would make a stitched mitre spread). The fullness is simply folded to one side when turning the corner.



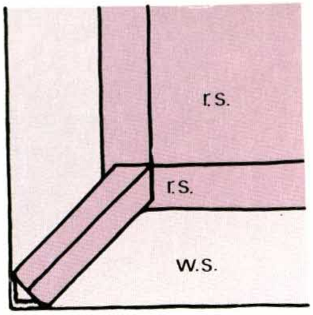
Simple stitched mitre. Used when applying a bulky braid which will need its turnings trimmed.



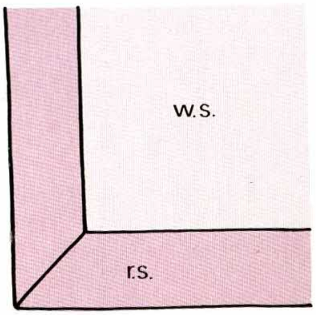
Mitring the corner on a tablecloth. On adjoining sides of the cloth, fold over the raw edges 1.5cm (½") on to the wrong side and press. Make another fold 3.5cm (1¼") from each of the first folded edges and press again. Open out the second folds and turn in the corner on a diagonal line Y-Z going through the point where these fold lines cross, and at an equal distance from the corner on both sides. Press and then open out the corner fold. Leaving the first 1.5cm (½") folds turned in, trim off the corner 6mm (¼") outside the diagonal crease, cutting firmly through the folded edges (fig.a).
With right sides together, fold the cloth along A-B and stitch from X-YZ. Trim bulk in seam allowance. Press seam open (fig.b).
Turn the corner right side out, easing out the point gently with a knitting needle. Press (fig.c).



a. *The corner trimmed away.*



b. *Corner seam stitched and pressed.*



c. *The finished mitre.*

Using files to shape and carve

Wood — modeling 1

Working with wood is not all practical carpentry. Often a piece of wood—a scrap or off-cut—shows a lovely range of colours and grain—the kind of piece a wood supplier would be happy to give you. Why not shape it with a file and polish it to show the surface at its best?

A large piece of wood may appear difficult to work with, as you have to imagine a three-dimensional shape emerging from it. So start on a small scale and become familiar with the tools, the texture of the wood and the way the grain runs. It will give you the confidence required to work with large pieces of wood. You can start with any odd pieces or use an old broom handle or piece of dowel.

The buttons illustrated were all made from pieces of scrap wood. You do not necessarily have to make buttons; using the same technique you can adapt the pieces to make counters for draughts or backgammon. The ambitious can even make chessmen.

Tools

Bench clamp, vice or G-clamp. You will need one of these tools to grip the wood while you are working with it. A bench clamp or vice is ideal. A G-clamp is inexpensive but it can be a bit awkward if you want to grip the wood in a perpendicular position.

Hand drill with bit to drill holes.

Files are available in various sizes and shapes but start with a half-round file, size 150mm (6″), and add the others as you need them.

A saw for cutting the wood to the required size or thickness.

Materials for buttons

The wood can be any size or shape but start with small pieces that will not need too much cutting. Look for grain and colour as these features make the buttons very attractive.

It is best to shape as much of the object as possible before cutting it from a large piece—ie, if you use a piece of dowel, shape the flat surface first and then cut off the required thickness. This makes it easier to grip the wood while working.

To make a round button

Bought buttons are usually rather dreary or else extremely expensive. Wooden buttons look particularly handsome on coats and jackets made of tweed, linen or knitted yarn. A set of hand-made buttons will give an obviously store-bought coat a couture touch.

You will need:

A piece of dowel 3cm ($1\frac{1}{4}$″) diameter, 15cm (6″) long. The number of buttons made will, of course, depend on the thickness of the buttons but you should be able to make at least 8 buttons.

Fine grade glasspaper.

Wax, paint or stain to finish.

Tools listed above.

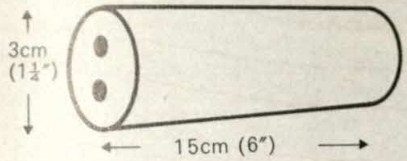
☐ Cushion the dowel with a piece of

Left: Ramin dowel, triangular file with a blade 150mm (6″) long and an off cut of 25mm (1″) square of softwood.
Right: A collection of buttons made from dowel, softwood and hardwood offcuts. Some are polished, others stained or waxed. Designed by Roger Polley.

cardboard so that the bench clamp or G-clamp does not mark the surface of the wood.

☐ Clamp the dowel to a working surface. Make sure that it is secure.

☐ Drill 2 or 3 holes in the round centre of the dowel (fig.1). You can make them



1. *The holes can be drilled before actually cutting a section for a button from the length of dowel.*

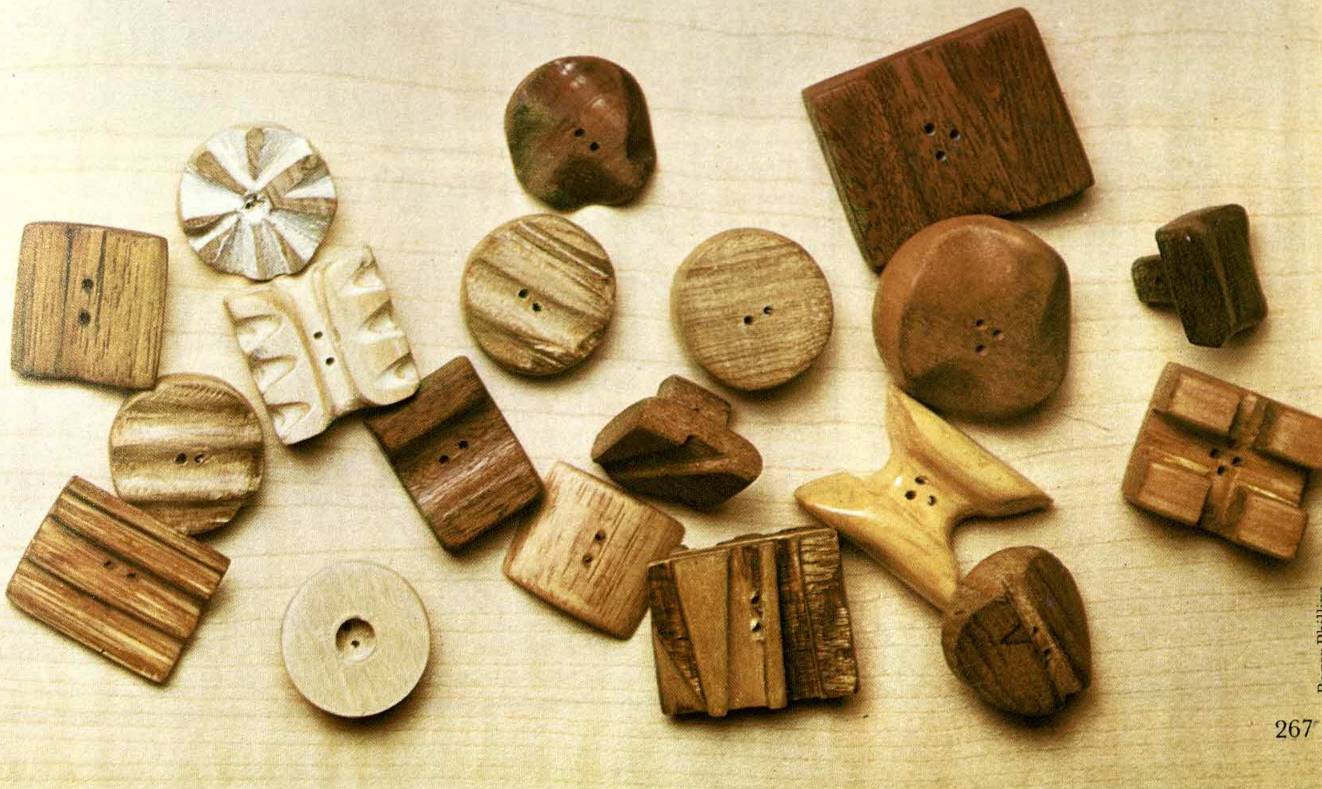
quite deep so that you will not have to drill holes for the next few buttons.

☐ Using the round file remove the wood to form a pattern. You can either make a corrugated surface or work at an angle towards the centre, depending entirely on the design you want.

☐ Smooth the surface with a piece of fine glasspaper.

The buttons on this knitted cardigan are shaped from a piece of dowel and waxed to enhance the grain. Designed by Roger Polley.

Tony Moussoulides



Roger Phillips

Tool box

Roger Phillips

Surforms, above, are available in a variety of sizes and shapes. Flat Surforms are used in much the same way as large files and planes, while the round Surform, right, is perfect for shaping wood. They are similar to files but can be used on wood, plastic and some metals. Replaceable blades can be slotted into the handles. The blades do not clog as they are pierced like a cheese grater.
Files (below) are used for shaping in awkward corners, and come in a wide range of sizes. They can be flat, half rounded, or round. The files shown have 20cm (8") blades and the three flat files, left, are about 19mm (¾") wide.

☐ Saw off the thickness required for the button and sand the edge until it is smooth.

☐ Wax or stain the button to finish.

Varying the shape
You do not have to use a piece of dowel—a cross-section of softwood can also be used. Even if its shape is square you can file away until you have a bow shape or any irregular shape which you find interesting.

To make unusual shaped buttons, say in the form of a heart, cut the outline from a piece of paper and draw this on to the wood to get the buttons all the same size and shape.

It is not difficult to get the buttons similar and, if you use the grain running in the same direction for each button, it helps to achieve a uniform appearance.

Always make sure that the piece of wood is long or large enough to make the required number of buttons to complete the set. This is most important when waxing the buttons so that they will all have the same colour, whereas if you stain or paint them the applied colour will give them the required uniformity.

You can add to your collection of files as you progress. For grooves and flat surfaces you will need a triangular and a flat file and you can always use a saw to make a criss-cross pattern or a series of parallel grooves.

Once you have got the feel of shaping wood you can think in terms of larger items and any piece of wood then becomes an inspiration.

The sculptured box

This attractive plywood box can be used to hold trinkets and jewelry or, if the lid is close-fitting enough, cigarettes. The plywood can be shaped in a number of ways and its different layers can be used to break the straight lines of the box, giving it a softer, rounder appearance and interesting 'markings'.

For a box 8cm x 10cm (3"x3¾"), 10cm 3¾") deep:

You will need:
1cm (⅜") thick plywood, 30cm x 20cm (12"x8").
Wood glue.
2.5cm (1") brass hinge and screws.
Brass hook fastening, eyelet, washer.
Masking tape.
Fine grade glasspaper.
Wax or wood stain for finishing.

Tools
Fine saw.
Hammer.
Flat file (or use the flat side of a half-round file).
Round Surform.
Small screwdriver.
Vice, bench clamp or G-clamp.

☐ Cut the plywood into 6 pieces:
4 to measure 8cm x 8cm (3"x3") to make the sides, and 2 to measure 8cm x 10cm (3"x3¾") for the lid and base.

☐ Glue the 4 sides together to form a bottomless box. Spread the glue evenly over the surfaces and secure the box in the vice or G-clamp to hold it together until the glue is dry.

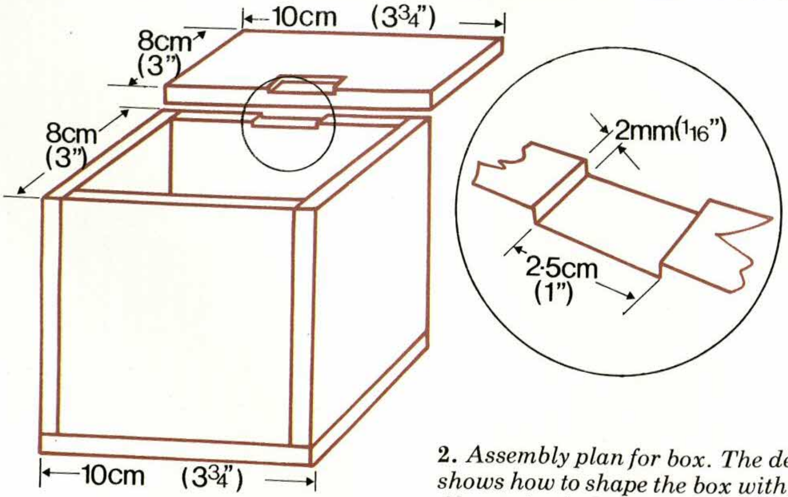
☐ Glue the base to the box. If the sides are uneven because of inaccurate sawing, don't worry as you can correct them when shaping the box.

Fitting the hinge. Decide on what is to be the back of your box and calculate the centre point of the upper edge. Find the corresponding point on the lid, using a side with the same length as the back.

☐ Measure 1.25cm (½") on either side of the centre point and mark the box and the lid.

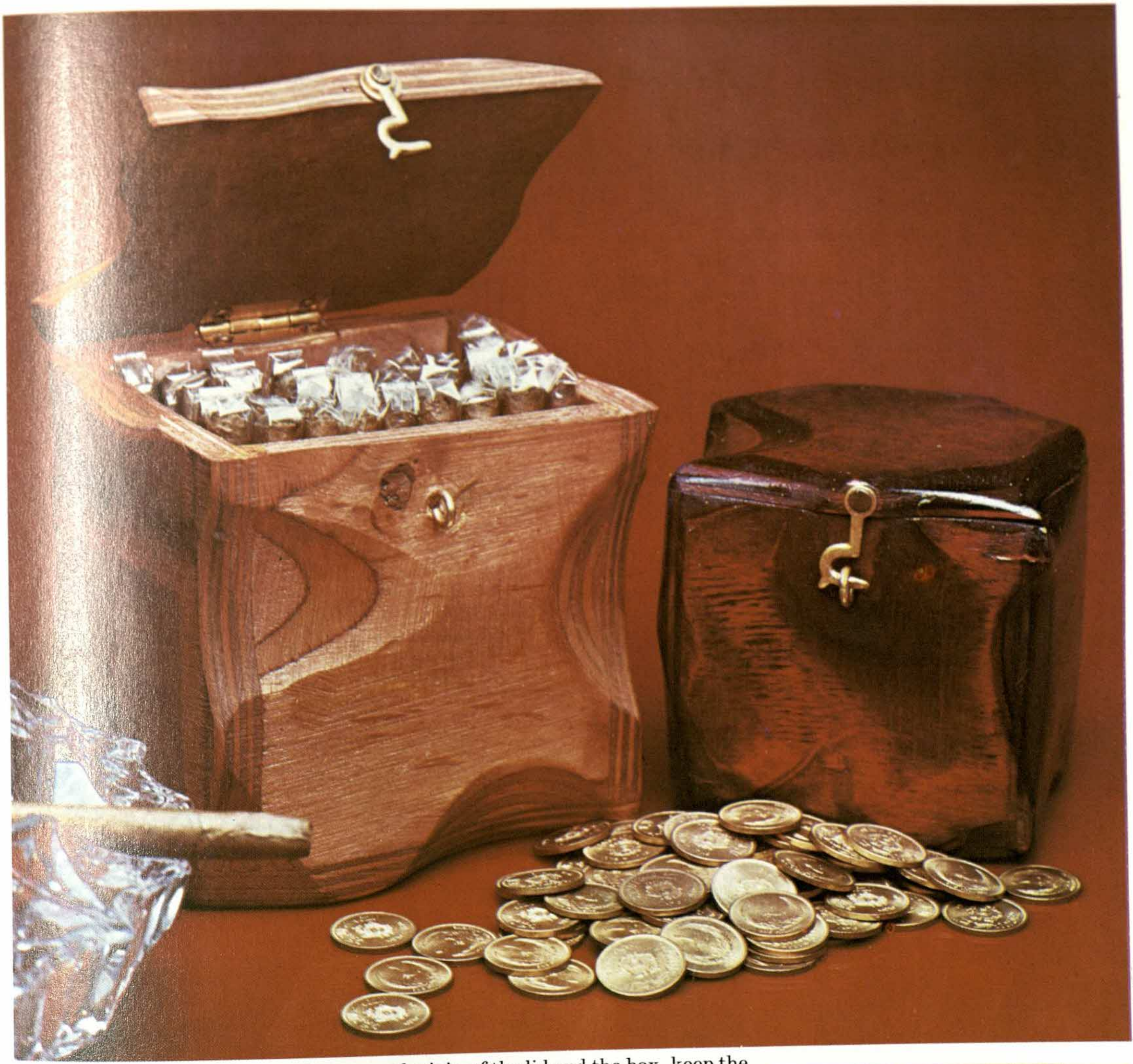
☐ File down 2mm ($\frac{1}{16}$") between these two marks, along the top of the box (the edge of the plywood side). (See Carpentry chapter 4, page 238). Check the hinge fits snugly into each recess.

☐ Mark the position of the screws and tap a nail lightly in the marks to start



2. Assembly plan for box. The detail shows how to shape the box with a flat file to take the hinge.

Trevor Lawrence



Johnnie Ryan

The box is shaped with a Surform to create irregular hollows and to expose the layers of plywood.

the holes and to position the screws accurately.

☐ Screw the hinge to the top of the box and attach the lid to the hinge.

Shaping the box. You can stick down the lid with masking tape when you need to. Secure the box in the vice or G-clamp.

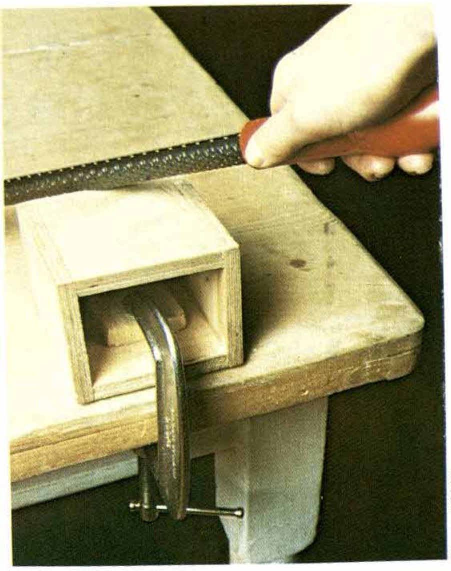
☐ Mark the centre of the front of the lid, leaving this area flat when shaping to accommodate the hook at a later stage.

☐ Use the Surform to round the edges and to form curves. Even the corners can be rounded. Work diagonally downwards taking care not to remove too much of the plywood at any one particular point. Except when working the join of the lid and the box, keep the lid open. Keep an eye on the thickness of the box when using the Surform—you don't want to file too far and wear right through the wood! Try to use the different layers of the plywood to form curves that are interesting.

Finishing. To finish the box rub it down with a fine grade glasspaper and then wax or stain the entire surface. A natural wood stain will bring out the natural grain of the plywood.

☐ Place the washer underneath the hook and screw it to the centre of the front edge of the box lid.

☐ Screw in the eyelet. For a tight fastening, the hook must swing just under the top of the eye.



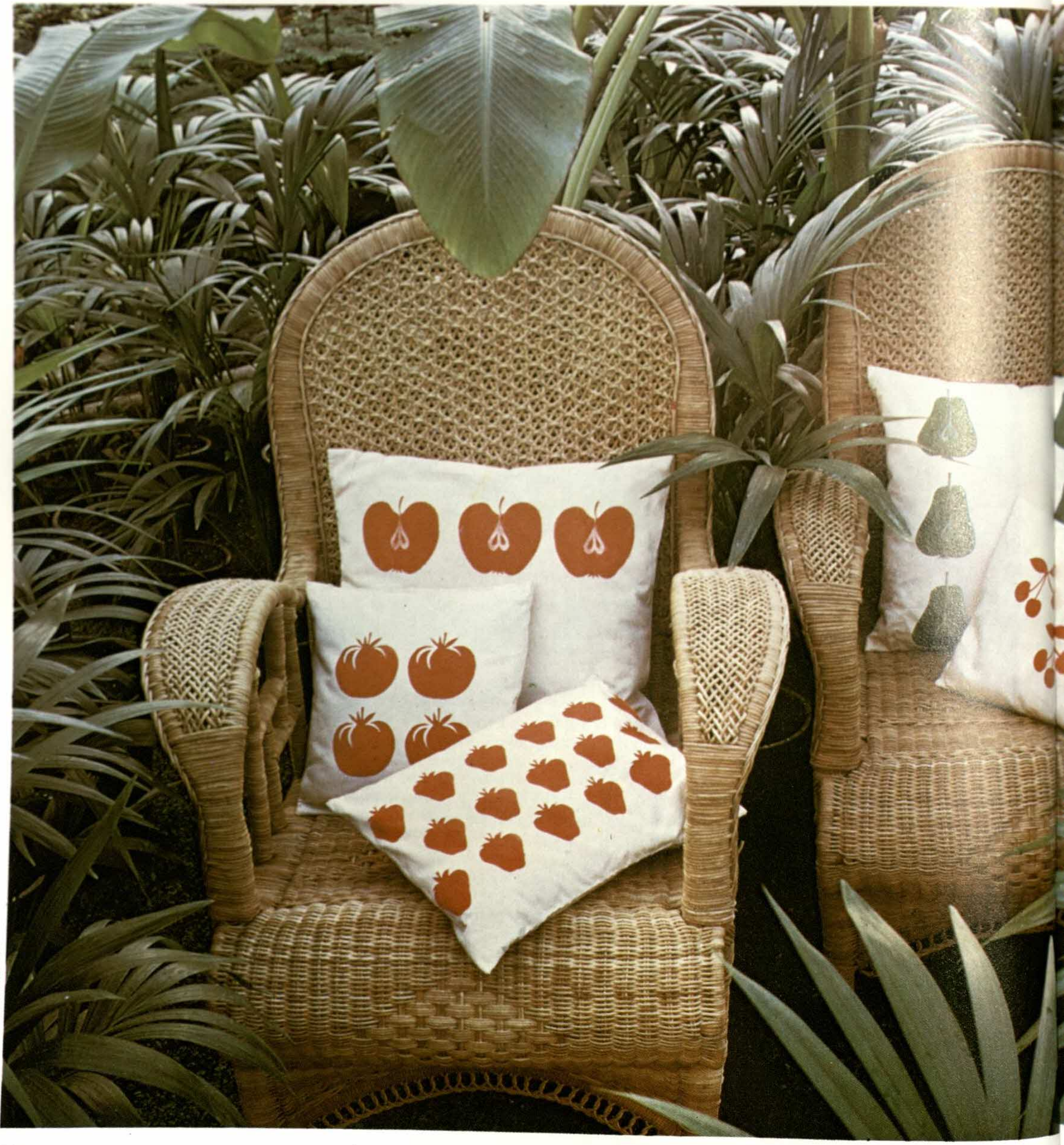
Roger Phillips

Hold the basic box securely in a G-clamp, then use the Surform at various angles to shape the plywood.

Stencilling on woven materials

Colour — stencils 3

Stencilling on cloth gives anyone with an eye for colour and an urge for creativity wide-ranging opportunities for making changes in their home or wardrobe.
A single stencilled motif such as a sailing ship or a palm tree, for example, is easy to cut out and can be stencilled on to a tee shirt or a table mat, the pocket of a blouse or the front of a laundry bag.



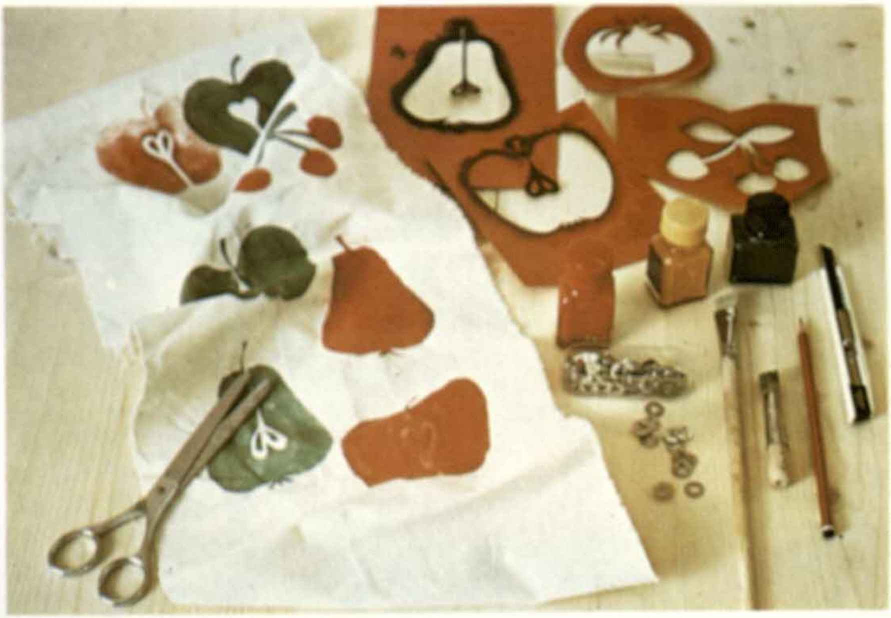
100 Idées de Marie Claire/Mirand

Alternatively, stencilled motifs can be repeated over and over again to make a border or an all-over design. Delicate flower borders on sheets and pillowcases or on the hem of a child's dress can be very effective, while all-over patterns can be used on a number of items, such as tablecloths, scarfs and shirts.

Straw hats and baskets, satin shoes and canvas awnings can all be stencilled and more ambitious designers can even stencil lengths of cloth. Beginners however, may prefer to stencil ribbons and tapes for trimming clothing or household items, since mistakes are not so disastrous as when made on the object itself.

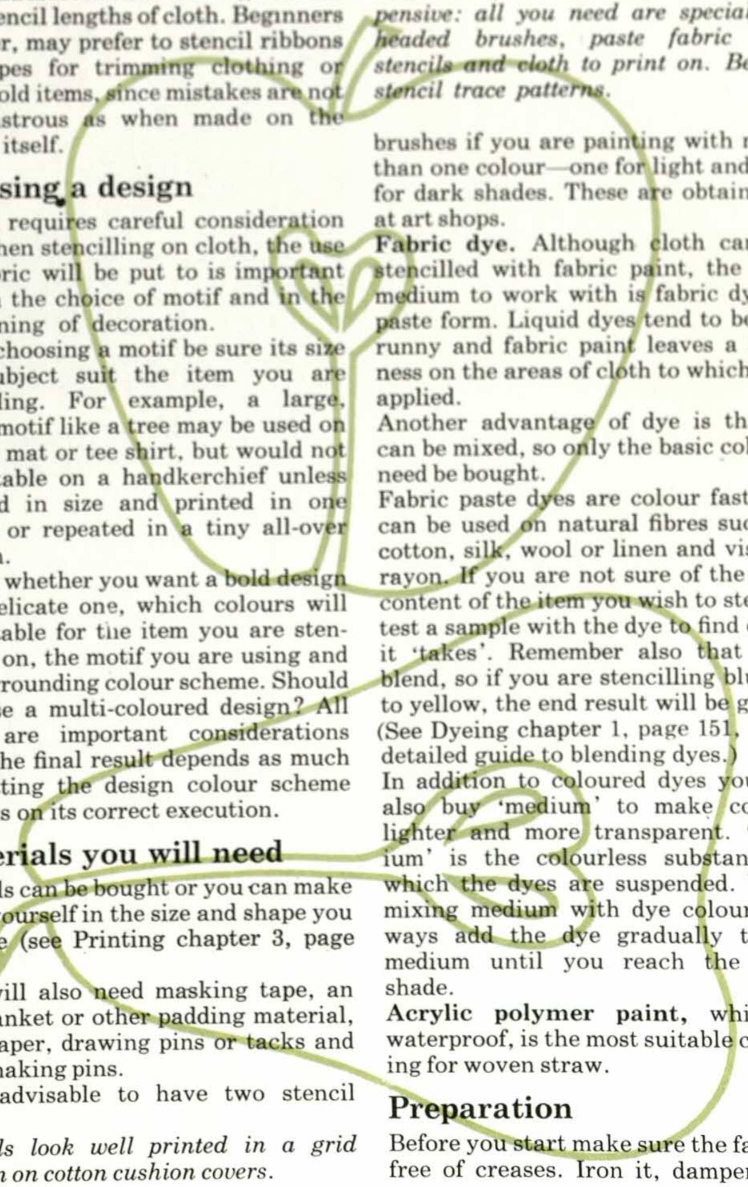
Stencils look well printed in a grid pattern on cotton cushion covers.

Trevor Lawrence



100 Idées de Marie Claire/Mirand

Materials for stencilling are not expensive: all you need are special flat headed brushes, paste fabric dye, stencils and cloth to print on. Below: stencil trace patterns.



Choosing a design

Design requires careful consideration and, when stencilling on cloth, the use the fabric will be put to is important both in the choice of motif and in the positioning of decoration.

When choosing a motif be sure its size and subject suit the item you are stencilling. For example, a large, single motif like a tree may be used on a table mat or tee shirt, but would not be suitable on a handkerchief unless reduced in size and printed in one corner or repeated in a tiny all-over pattern.

Decide whether you want a bold design or a delicate one, which colours will be suitable for the item you are stencilling on, the motif you are using and the surrounding colour scheme. Should you use a multi-coloured design? All these are important considerations since the final result depends as much on getting the design colour scheme right as on its correct execution.

Materials you will need

Stencils can be bought or you can make them yourself in the size and shape you require (see Printing chapter 3, page 128).

You will also need masking tape, an old blanket or other padding material, newspaper, drawing pins or tacks and dressmaking pins.

It is advisable to have two stencil brushes if you are painting with more than one colour—one for light and one for dark shades. These are obtainable at art shops.

Fabric dye. Although cloth can be stencilled with fabric paint, the best medium to work with is fabric dye in paste form. Liquid dyes tend to be too runny and fabric paint leaves a stiffness on the areas of cloth to which it is applied.

Another advantage of dye is that it can be mixed, so only the basic colours need be bought.

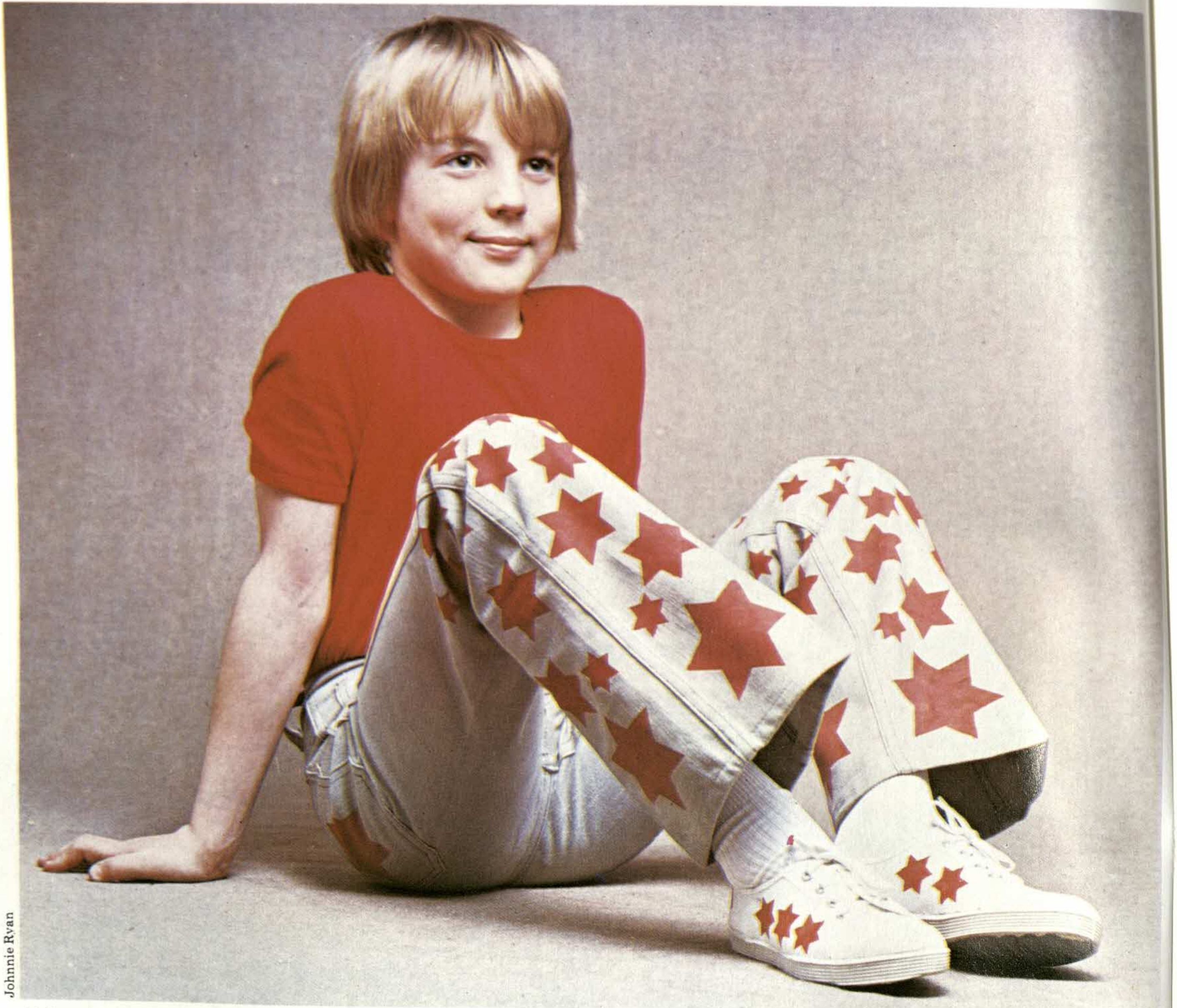
Fabric paste dyes are colour fast and can be used on natural fibres such as cotton, silk, wool or linen and viscose rayon. If you are not sure of the fibre content of the item you wish to stencil, test a sample with the dye to find out if it 'takes'. Remember also that dyes blend, so if you are stencilling blue on to yellow, the end result will be green. (See Dyeing chapter 1, page 151, for a detailed guide to blending dyes.)

In addition to coloured dyes you can also buy 'medium' to make colours lighter and more transparent. 'Medium' is the colourless substance in which the dyes are suspended. When mixing medium with dye colours, always add the dye gradually to the medium until you reach the right shade.

Acrylic polymer paint, which is waterproof, is the most suitable colouring for woven straw.

Preparation

Before you start make sure the fabric is free of creases. Iron it, dampening if



Johnnie Ryan

Star stencils can be cut out in many sizes and printed singly or in 'milky way' clusters on denim or canvas.

Below. The trellis (see Stencils chapter 2, page 243) makes a handsome border for a cotton tablecloth.

Janet Allen

necessary. If the cloth contains starch or dressing, you should wash it thoroughly before printing.

Secure the blanket or padding material to the table top, stretching it taut. This can be done by wrapping it round the table ends and taping it to the underside or fastening it with drawing pins or tacks.

Put several sheets of newspaper on top of the secured blanket to soak up any excess dye that may go through. If the fabric you are stencilling is very fine, put some blotting paper on top of the newspaper for added absorption.

Stretch out the fabric you intend to print and attach it to the blanket with pins.

If you are stencilling something double-sided like a pillow-case or shirt, slip some paper inside to prevent the dye from going through and marking the other side.

If your design involves a repeated pattern, it is wise to pencil guide lines very faintly on the cloth. Small holes in the corners of the stencil paper can be useful for this purpose (Stencils 2, page 242). For dark fabric use tailor's chalk which can be brushed off easily.

To stencil

Fasten the stencil to the fabric with pieces of masking tape and put some of the dye into a shallow container.

Do not overcharge the brush with paint but take enough to allow you to work with ease and in control of the brush.

Using white dye or a very light colour mixture may make it necessary to stencil the image twice. If so, let the first coat dry before applying the second and line the stencil up carefully using punched holes in the stencil paper corners.

When working multi-coloured designs

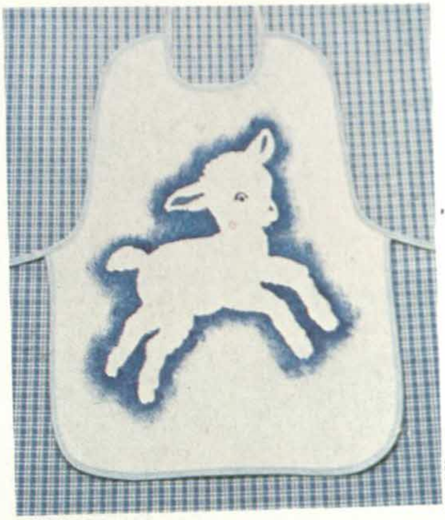
stencil the first colour and let this dry before proceeding with further colours. In such cases it is often helpful to mask out the areas to be coloured with a second colour while applying the first and vice versa. This way you avoid getting the dye in unwanted places and it is also less confusing.

When the finished item is thoroughly dry, iron it from the back, according to the dye manufacturer's instructions, to fix the dye.

When washing later on, use care and do not wring.

Reverse stencilling

With reverse stencilling a mask or template of the shape of the design is used to prevent the paint from reaching the surface to be decorated, so that the design is painted round the outside of the shape. This technique can be used on any sort of surface from walls to fabric. Use double sided tape to fix the template to the surface. Then, if the colour is to reach right to the edge of the surface, apply colour in the usual way.


Paul Kemp

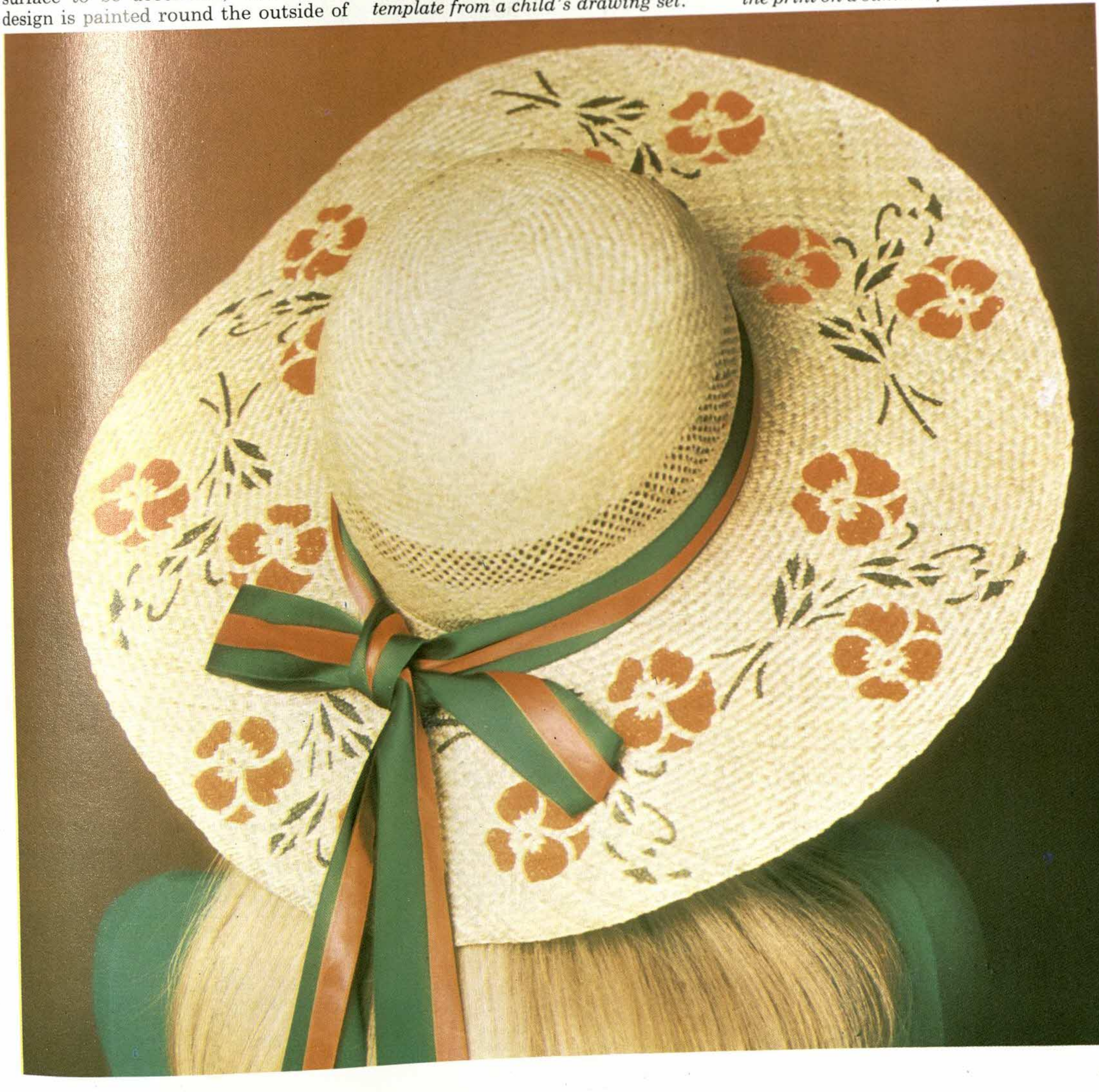
The lamb is a 'reverse' stencil using a template from a child's drawing set.

Or the area of colour can be contained by making a larger, square mask to frame the colour.

Otherwise fade out the colour gradually by stippling, ie by varying the pressure of the brush when you apply dye or paint. For walls or furniture, aerosol spray paint is also effective.

You can use the cut-out part of any ordinary stencil to build up an alternating 'positive/negative' design with the stencil.

Straw hats can be stencilled to match the print on a summer frock.


Terry Moussoulides

Transparent enamels

Enamel 3

Roger Phillips

This enamel and silver brush set is a fine example of 1930's enamelling. The silver base has a patterned surface which accounts for the rayed effect.

Transparent enamels show the surface of the metal on which they are fired or, if fired without a metal base—a very difficult process—they allow light to pass through them.

The beautiful colours combined with the transparent qualities make these enamels very exciting. They can be used in the same manner as opaque enamels to make jewelry and napkin rings etc. With opaque enamels it is the solid brilliance of colour that is appealing but with transparent enamels the colours are less intense and they appear to be set below the surface, producing a quality similar to that of semi-precious stones.

Generally transparent enamels are hardfiring, ie they require a high temperature to fire, often higher than the temperature required for opaque enamels. So, despite their transparent qualities, these enamels will stand up to a certain amount of wear and tear, depending on what they are used for. However, enamels are basically glass so they can break when dropped. They should not be subjected to extreme changes in temperature as the expansion and contraction can cause the enamel to crack and chip.

Transparent enamels are not very different from opaque enamels and the firing techniques are similar. However, there are a few additional things to do to obtain good results.

Flux

Flux, when fired, forms a clear base on which to fire the transparent enamels. This gives the enamel more depth while still showing its colour. The flux is not essential—the transparent enamel can be fired directly on to the metal—but, as it improves the transparent quality of the enamels, it is usually used.

Flux is powdered enamel and available in different grades which fire at different temperatures. Start with what is called a normal flux and do some test firings. It is a good idea to keep the tests you make so that if you change the type of flux you are using you will be able to compare the results. The different grades of flux affect the colour rendered by the transparent enamels. If you use a very hard flux, for example, it has an orange tint and will affect the final colour of the enamel fired on it.

Soft flux requires a lower firing temperature than the enamel and is most useful for repair work. If a fired enamel is slightly burned around the edges or has an uneven surface, fire it for a short period until it is red hot. Remove it from the kiln and immediately powder it with a soft flux. The enamel will be hot enough to melt the flux which will form a clear glaze over the enamel.

Test firing

Test firings are essential. The pieces you test fire do not have to be large and are therefore inexpensive. They simplify later work when you will want to know the colour values of a particular powder.

The colour of the metal blank will, of course, show through the transparent enamel. Some transparent enamels might look completely different when fired on copper, silver or gilding metal. Keep tests of the various results so that in future you can refer back to them when planning a design. You can attach the sample firings to the enamel powder containers for easy reference. It will save you making the same tests at a later stage and will also prevent any chance of not achieving the effect you want.

Make two firings for each colour—do one firing with flux and the other without. The flux influences the depth or reflective qualities of the enamel and, for some colours, the flux will not be necessary—this is largely a matter of taste. Also, as different brands of enamel will give varying results, always do test firings when using a new brand of powder.

Counter-enamelling

Counter-enamelling is not essential for very small pieces but transparent enamels are seldom fired without it (see Enamelling chapter 2, page 190). If the flux is fired thinly and evenly and

Roger Phillips

if the transparent enamel is applied in the same way, counter-enamelling is not essential. But firings like this are seldom satisfactory as they tend to be flat and pale in colour. To get more depth and colour you need to apply the transparent enamel fairly thickly or do two firings—the latter method being recommended. To achieve this successfully the metal must be counter-enamelled or else the enamel will flake off. The enamel flakes off because the contraction of the metal is different from that of the enamel. The combined thickness of flux and enamel when cooling stresses the copper, causing the enamel to crack. Counter-enamelling will prevent this.

The flaking or cracking of the enamel can also be prevented by using a thicker gauge for the metal blank. But, as this is not always possible and can be expensive, counter-enamelling is used to counteract the stress between the cooling metal and the enamel.

If an enamel should crack throw it away or hit it with a hammer to remove all the enamel, then clean the metal and refire it. Do not run your finger over the cracked enamel. It is extremely sharp and will shave the skin from your finger tip.

To make a transparent enamel brooch

You will need:

Equipment. See Enamel chapter 2, page 190.

Materials. Transparent enamel powders in any colours you like. Keep them in airtight containers as moisture or damp will ruin them.

Metal blank.

Brooch finding from a jeweller to attach to the back of the metal blank.

Counter-enamelling powder—optional.

Normal flux.

Emery paper.

Anti fire-scale liquid—optional.

☐ Switch the kiln on so that it will be hot enough, ie bright orange, by the time you have prepared the metal blank.

☐ Rub down one side of the blank with the emery paper until it is shiny and covered with small scratches.

☐ Paint the other side with anti fire-scale liquid and leave it to dry.

☐ Sieve the counter-enamelling powder on to the scratched metal surface and fire it.

☐ When it is cool remove the fire-scale. It should flake off if you used the anti-scale liquid.

☐ Clean, shine and scratch this surface with emery paper.

☐ Sieve the flux on to this surface.

☐ Using the spatula, lift the metal on to the stilt and place this on the wire mesh stand. It is better to use the flux fairly thick because, if it is too thin and fires unevenly, it cannot be corrected—you will have to start again.

Keith Morris

Transparent enamels fired on copper. The octagonal pendant has been fired over a layer of silver foil.

☐ Fire the flux in the same way as for the enamel powder.

☐ Once it is cool lightly rub the sides of the metal with emery paper to clean it but be careful not to damage any of the fired surfaces.

☐ Sieve the transparent enamel powder on to the flux base evenly.

☐ Place this on the stilt and the wire mesh stand, and fire.

☐ If the colour is too pale you can add more powder and refire it or, if the colour is uneven, you can also add more powder and refire.

☐ Leave it to cool completely and then glue the brooch finding to the counter-enamelled side.

☐ Always compare your results with the test samples you have made and keep a record of the results and the number of times the piece was fired to achieve a particular colour.

This will be very useful to refer back to when you want to combine different colours.

Foil

To give transparent enamels more interest you can fire them on silver or gold foil. Silver and gold are ideal metals to use as a base for enamelling on but are also very expensive.

So, to obtain the effects of these precious metals you can use silver or gold foil. They are available in sheet form, are extremely thin and fairly inexpensive. The results are most attractive as the foil has a more reflective surface than copper or gilding metal and therefore shows the transparent enamels at their best. Start with silver foil and experiment with small blanks.

To work with foil

Start by counter-enamelling the blank. Clean the top surface with emery paper and apply a coat of enamel powder and fire it. This surface must be smooth without any imperfections. Fire it a second time if necessary.

Cut the foil the shape of the blank but make it slightly larger so that the ends of the foil overlap all around the blank.

Wet the blank and smooth foil over it.

Using a carborundum stone (available at hardware stores) remove the excess foil by working it downwards against the edge of the blank.

Leave the blank on top of the kiln for a few minutes to dry.

Fire it to fuse the foil with the enamel underneath.

Watch while it fires and should the foil lift around the edges use the spatula to push it gently down.

Remove it from the kiln and let it cool before applying the transparent enamel.

You do not need a flux if using foil.

If you are firing larger pieces you must avoid trapping air underneath the foil. To do this prick the foil once it is in position with a pin or needle. If you do this the bottom layer of enamel should be flux or transparent. And again, if the silver foil lifts during the firing press it flat with a spatula.

Instead of water special enamelling oil can be used with the foil. With oil you will not need to wait for the blank to dry before firing. Beginners may find oil easier to use. If initial results are not satisfactory try again.

Another example of a textured base. These button blanks have a pressed design which gives depth to the enamelled surface. Some of the colours require a flux base to look their best.

Polishing stones for jewelry

Lapidary 2

Tumbling is the process that smoothes and polishes pebbles and stones so that they are ready for use as jewelry or any other decoration. It is done with a tumbling machine, which runs from an ordinary power point in the home. This machine can take any potentially attractive pebble or small stone and smooth it till it has a permanent shine.

You can tumble pebbles picked up from the beach or stones you have found in the countryside. Or, if you are not satisfied with what you have collected or want greater variety, you can buy rough pieces of stone from lapidary shops and polish them. The smoother the stone you start with, the shorter the process; but even rough pieces can be polished successfully. And the results are stones of beauty and fascination that you can use in all sorts of different ways.

Choosing a tumbler

A simple tumbling machine consists of a small barrel, which is turned by rollers, powered through a pully or gear system by an electric motor. The stones are placed inside the barrel with just enough water to cover them and a small quantity of very hard grit, called silicon carbide. They then tumble on top of each other till they are smoothed down. Coarse grit is used at first, then finer grits and lastly a polishing agent.

There are tumbling kits available which usually include a machine, the necessary grits and polishing agents, a batch of stones, epoxy resin glue and a selection of findings or jewelry mounts, to which you attach your polished stones. Any shop specializing in lapidary will stock all the equipment you need—they are quite used to giving guidance to beginners so don't be put off by the fact that they also deal in finished stones and supplies for experts.

Tumbling machines are available in a variety of sizes and with one or more barrels. Most small machines run at one speed only but some offer variable speeds.

Machines with two or more barrels are very useful, since you can tumble different sets of stones at the same time. This avoids the bother of having to wait till one cycle is completed before starting another. It is ideal, too, if you can keep one barrel exclusively for the final polish since, for this, the barrel must be completely free of grit. In small barrels you can only tumble stones up to about 40mm (1½″), therefore a larger barrel means that you can tumble larger stones.

With a variable-speed machine you can shorten the first, rough tumbling stage by using the high speed. The low speed (standard for one-speed machines) is used for the later stages, when fast tumbling will cause cracking and unsatisfactory results.

The disadvantage of larger or more complicated machines is that they cost more. If you intend to make jewelry in commercial quantities they are well worth the extra cost, but the beginner will probably be satisfied with a small machine.

Small, one-speed machines usually have a capacity of 0.675kg (1½lb) to 1.35kg (3lb) and are able to tumble 100-200 pebbles at a time, from the size of a pea up to roughly the size of the top joint of your thumb. With the larger machines you can tumble slightly larger stones.

The smoothing grits used in tumbling machines are made of silicon carbide. This is much harder than any pebble, with a hardness of 9½ on Mohs' scale, and makes an excellent abrasive for smoothing pebbles.

The grits are distinguished by grade numbers — the higher the grade number, the finer the grit. '60 grade' grit, which is commonly used for grinding the rough edges off pebbles, will pass through a screen with 60 meshes per 2.5cm (1″). Grits from 60 grade to 600 grade, which roughly correspond to the difference between coarse sandpaper and fine glasspaper,

Sandra Lousada

Tumbled jasper pebbles have been carefully matched to make up this necklace. The stones are glued into bell caps.

are available at any rock shop.

Polishing agents are used in the final tumbling stage. These are either tin oxide or cerium oxide and are used to add the polish when a stone is already smooth.

Running a tumbler

When your tumbling machine is operating, it will run 24 hours a day for up to three weeks at a time—and it will be very noisy. Therefore you must put it somewhere where it will not be in the way and where there is a power point.

The stones tumbling over each other make a continuous swishing noise, so the tumbler should not be located where noise will be a nuisance. A workshop in the garden is ideal but a little-used corner away from bedrooms will do.

If you put the machine on top of several layers of newspaper, this will help to deaden the sound and also to catch any dirt that may spill when you load or unload the machine. A strong cardboard box, with one end open for ventilation, also acts as an effective sound barrier.

Operating the tumbler. Before you load the machine, check the pebbles you are going to use—they should be of varying sizes and of similar hardness (see Mohs' scale, Lapidary chapter 1, page 250).

The smaller stones 'fit in' to the angles of the larger ones, so that more of their surface is being rubbed at any one time. Softer stones will rapidly be worn away by the harder ones, become ruined and clog up the whole process. Try to make a batch of pebbles in a similar condition—if there are some which are much more pitted than others, they will inevitably need more rough tumbling.

Load the barrel three-quarters full of appropriate pebbles. Pour in water till it just covers them. Add coarse silicon carbide grit according to the manufacturer's instructions—a tablespoonful of 60 grade grit is about right for a 0.675kg (1½lb) barrel.

Make sure that the lid of the barrel fits tightly, place the barrel on the rollers and switch on the motor. The barrel should turn smoothly at about 40 revolutions per minute and the sound of the pebbles should be an even, swishing rumble.

If the sound is uneven and clicking noises can be heard, check your load. You may have too few pebbles, or some that are too large; if it sounds as if there is little movement going on, you may have too many. In time, you will know immediately by the sound coming from the tumbler if the operation is going well.

The first rough-grind stage will continue for 5-7 days; exactly how long depends on the hardness and initial

STONES FOR TUMBLING

grouped according to Mohs' scale

Below is a list of the stones most commonly available through rock shops which are suitable for tumbling.

You will notice that some stones range over two or three numbers, such as Serpentine 2½-4. This is because some stones have different hardness values, depending on what part of the world they come from. Always test them before mixing with other stones in your tumbler. Add to this list the Mohs' scale number of other stones you find or buy.

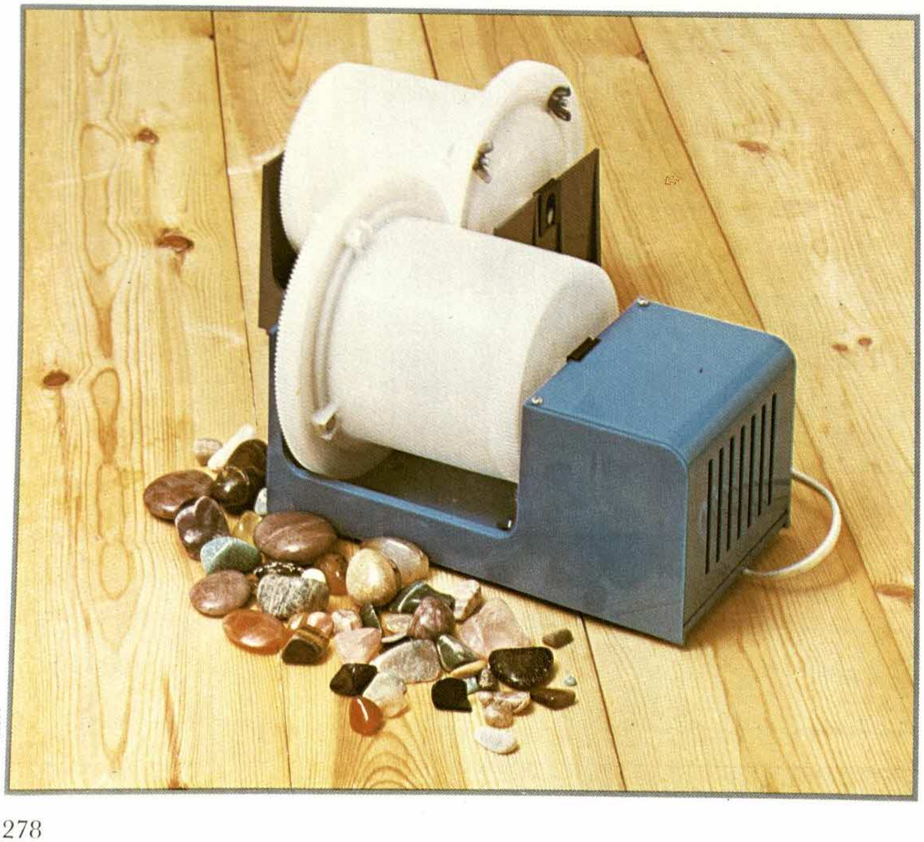
8	Beryl 8 Chrysoberyl 8½	Topaz 8
7	Most Agates 7½ Agatized Coral 7½ Amethyst 7 Bloodstone 7 Chalcedony 7½ Crocidolite (Tiger Eye) 7 Cornelian 7½ Chrysoprase 7 Citrine 7 Chalcedony Onyx 7 Flint 7½ Garnet 7½ Green Garnet 7 Green Chalcedony 7½ Iolite 7	Jadeite 6½-7 Jasper 6-7 Mookaite 7½ Moroccan Beans 7½ Petrified Wood 7 Petrified Bone 7 Pink Botswana 7½ Quartz Crystal 7 Rock Crystal 7 Rose Quartz 7 Rutilated Quartz 7 Smoky Quartz 7 Tourmaline 7½ Turitella Agate 6-7 Zircon 7½
6	Amazonite 6 Aventurine 6-6½ Black Jade 6½ Bruneau Jasper 6½ Chrysocolla 5-7½ Green Jade 6½ Hematite 5½ Jadeite 6½-7 Jasper 6-7 Labradorite 6	Magnetite 6 Opal 6 Prehnite 6-6½ Pyrite 6 Rhodonite 5½-6½ Rutile 6-6½ Sodalite 6 Sunstone 6 Turitella Agate 6-7 Turquoise 4-6
5	Apatite 5 Brazilianite 5½ Chrysocolla 5-7½ Moonstone 5	Nephrite 5½ Obsidian 5 Rhyolite 5-6 Turquoise 4-6
4	Bowenite 4 Fluorite 4	Serpentine 2½-4 Turquoise 4-6
3	Aragonite 3 Calcite Onyx 3½ Coral 3½ Jet 3	Limestone 3 Malachite 3½ Marble 3-3½ Serpentine 2½-4
2	Alabaster 2 Amber 2-2½	Serpentine 2½-4

smoothness of the pebbles. The rough-grind cycle is finished when the grit has been completely worn into clay. Inspect the load daily. You will not see too much difference in the first day or two, so replace any stones you took out, seal the lid and continue tumbling. Many stones contain small quantities of gas, which are released as the surfaces of the stones are ground away. These small quantities may build up if you do not remove the lid once in every 24 hours.

When the grit has been worn away, empty the whole load through a sieve into a bucket half filled with water. Let the sludge sink to the bottom and then wash as much grit as possible off the pebbles by dunking the sieve in the water at the top of the bucket. Finally, rinse the pebbles in running water and let them dry on a soft cloth.

If there is clean water at the top of the bucket, you may pour it off but do *not* let any of the sludge go down the drain—you will block it. The sludge dries like cement. Empty the sludge into a plastic bag, which can be sealed and thrown in the dustbin.

The second rough-grind cycle. If you are working with rounded beach pebbles, already partly smoothed by wave action, the rough-grind stage may only need one cycle. However, if you are using jagged, broken gemstones from a rock face, you may need three complete rough-grind cycles to achieve a good shape. In that case, repeat the operation with clean barrel, water and grit.



A tumbling machine, together with a second barrel. This machine is constructed so that the second barrel, which is sold separately, runs from the same motor as the first and can be geared to run at high speed for rough tumbling or at low speed for polishing.

Dick Miller

Eventually, the surface roughness will have been worn away, at least from most of the batch. At this stage sort the stones. Any that are still badly marked should be held back for re-tumbling with your next batch. The stones that are ready for the next stage will have an opaque look when dry but should be free of rough edges or obvious imperfections.

Second stage tumbling. Rinse the barrel thoroughly. Any particles of grit that remain will interfere with the finer grinding to come.

Replace the pebbles. If you have had to discard many, you may have to rough-grind another load before moving on to this stage. The barrel should be more than two-thirds full and, once again, too few pebbles will give a bad result. Load the barrel as before, using a finer grit (200 grade) and repeat the procedure, inspecting daily until the grit is worn away. This stage should remove the roughness left after the first stage.

When this is done, after a few days' tumbling, clean the barrel and pebbles as before, using the sludge-collecting method described in the first stage to avoid blocking the drains.

Fine grinding. Re-load and repeat the operation, using very fine silicon carbide grit (600 grade). Tumble for 5—7 days. Keep checking the load daily, until the surface of the pebbles is perfectly smooth and has a semi-gloss finish.

It is essential at this stage that you clean everything thoroughly—the pebbles, the barrel and the lid. If there are any grains of grit left, you will fail to achieve a high polish. Check the stones again and reject any that are cracked. Be absolutely ruthless about this; cracked stones will cause scratches on the others. Re-tumble them with your next load before polishing them.

The final polish. Put the selected pebbles back into the clean barrel carefully, so they do not chip each other as they fall. Add clean water to cover them. Add polishing powder, according to the manufacturer's instructions—a teaspoonful of tin oxide or cerium oxide should be right for a 0.675kg ($1\frac{1}{2}$lb) machine.

If, when you start tumbling, sharp noises indicate that the pebbles are rattling unevenly against each other, you may add a teaspoonful of wallpaper glue to thicken the mixture, but do not use too much. Clean plastic pellets, which are available at rock-shops, make a good filler if you do not have quite a full load.

Check the pebbles daily, as before. It will probably be about four days before they show a good gleam but keep going until there is no noticeable improvement on the day before. There is a perfect polish when the pebbles shine as brilliantly when they are dry as when they are wet.

Clean the barrel and rinse off the stones. Sometimes, the polish can be improved by tumbling for a few hours with a few drops of detergent in water. Be careful not to use too much detergent, or the bubbles will force the lid off. Finally, rinse and dry the stones. They should now have a sparkle which they will never lose.

General hints

It is a good idea to keep a record of exactly how long you have taken over each stage and exactly what materials and quantities you have used. Keep a couple of stones untumbled from each batch, so you can compare them with the final result and refer to them later, when you have a similar batch to work with.

Don't be afraid to experiment with different grades of grit or varying lengths of time—different stones will need slightly different procedures and even the experts are continually experimenting! You should be able to get an impressive result first time but, as always, there is no substitute for practical experience.

Making jewelry

Once you have polished stones, the next step is to use them. Stones can be made very simply into attractive—and unique—pieces of jewelry by using commercially available mountings, which are called 'findings'.

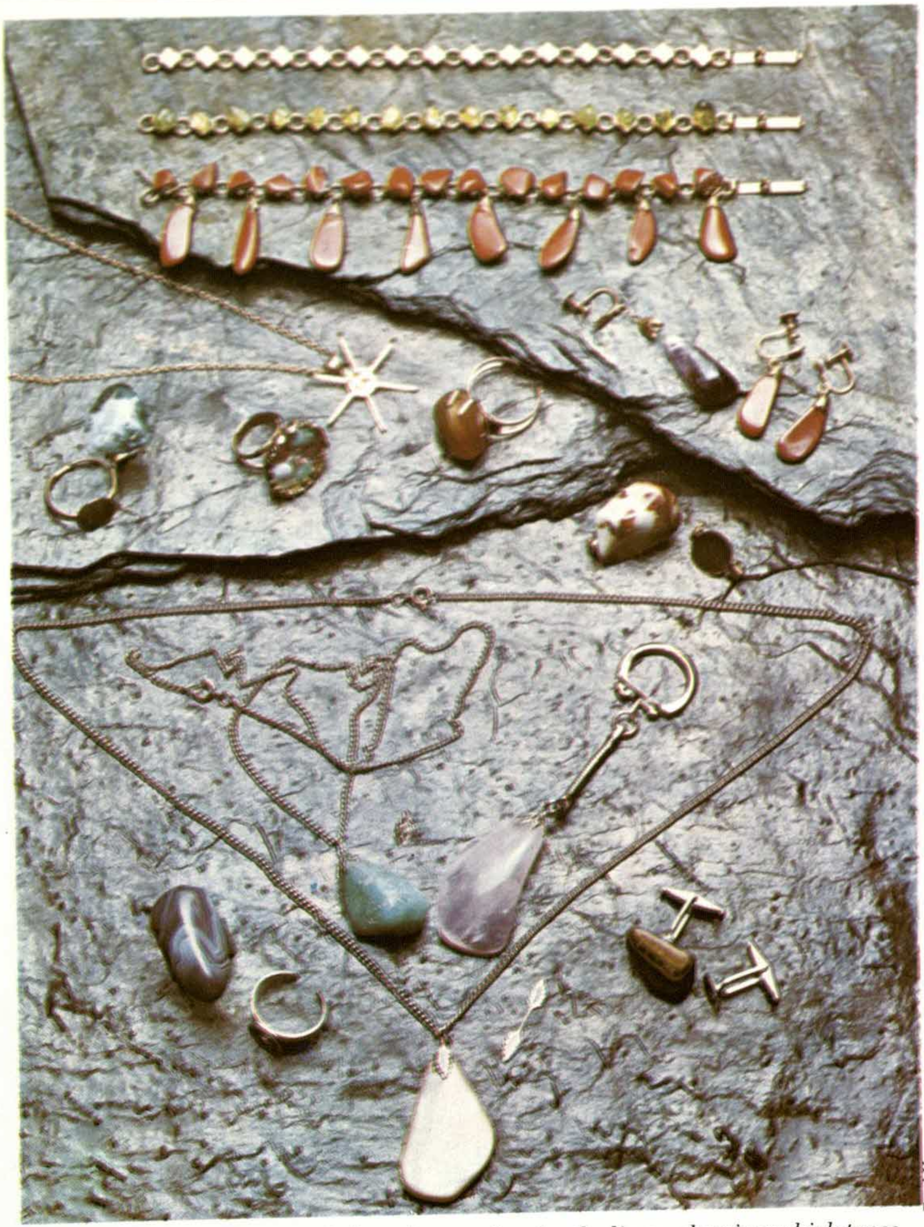
Findings are sold in lapidary shops and many craft shops which also sell polished stones, if you want to make jewelry but are not interested in polishing stones yourself.

Findings are made in various metals, at varying prices—the beginner is wise to start with cheap metal ones but, when you have made a few pieces, you may want to set a special stone in silver or gold. This is no more difficult, but do remember that the beauty of the stones is usually best shown off by simple settings.

Essentially, jewelry is made by gluing the stones to findings. There are three basic types of jewelry findings—flat pads, to which stones with flat bases are glued; bell caps which are bent over an end of a stone (usually a pear-shaped one); and claw settings where you glue a stone to a base and bend adjustable 'claws' round the stone to hold it in position.

These three types cover the findings you glue to the stone. Other findings include jump rings which are used to connect one section (notably, bell caps) to another. You can buy bracelets or necklets which may have flat pads or claws, others may need jump rings and bell caps to attach the stones. In general, you can buy findings for use as ear-rings, pendants, brooches, cuff-links, key rings—almost any piece of jewelry you may want to make—using one or other of the three methods.

The right finding for each stone. What finding you use depends on the stone and what you intend to do with it. Stones that taper to a point are most suitable for bell caps and for use as pendants, key rings or anywhere they can dangle. Stones with a flat side can be used on flat-based findings for rings and brooches. Round stones are generally best in 'claw' settings which can be adjusted to fit them.



Jewelry findings, showing which types of finding are most appropriate to various shapes of tumbled stones.

Paul Kemp

To make jewelry

You will need:

Polished stones.
Findings.
Epoxy resin adhesive.
Saucer for mixing adhesive.
Match-sticks for applying adhesive.
Jewelry pliers or tweezers.
Spirit.
Clean rags.
Shallow tray or tin.
Salt or sand.

Preparing stones and findings. Wash the stones and findings in warm water and detergent, to remove all traces of dirt and grease. Rinse and dry them thoroughly. Even the natural oils from fingers may affect adhesion, so a final wipe over with spirit is a good idea.

☐ Mix the epoxy resin, according to the manufacturer's instructions. Epoxy resin has the advantage of being extremely strong when it is set; but it is correspondingly difficult to remove, so be careful not to let any unwanted traces go hard.

☐ Since the resin takes time to set (up to three days for complete hardening), you may have to hold the stone and finding in position. To do this, pour a quantity of salt, sand or rice into a tray or tin and support them with this. Push the band of a ring or back of a brooch into the sand, so that the surface to be glued stays clear and level.

If you are applying a bell cap to a stone, push the stone in and set the bell cap on it.

☐ Apply the resin with a match-stick to both the finding and the stone. Wipe off any unwanted blobs of glue with a clean rag.

☐ **With a 'claw' mount** bend the claws into position with jewelry pliers (tweezers may do) before inserting the stone. Pull them out of place as little as possible when inserting the stone and then bend them firmly over it.

☐ **With a bell cap** be careful to position the cap, by watching the position of the eyelet at the top of the cap, so that the face of the stone that you prefer will face outwards when it hangs.

☐ When the glue is dry, brush off any particles of salt or sand from the finding and stone. If the piece needs to be connected to a chain or bracelet do this with a jump ring. Jewelry pliers will open these and twist them shut.

How to draw stars

Design know-how 10

Stars

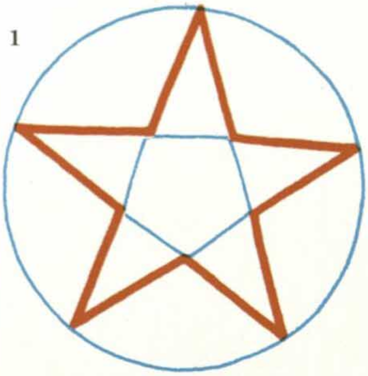
Stars with any number of points can be based on regular polygons—plot the points for the polygon on a circle but, instead of connecting the adjacent points, connect each point to the next but one (fig.1). If you have more than six points, connect each point to the next but two or next but three and so on. Experiment to see which shape suits you best.

If you want the points to be more tapered, draw radii to each point and draw a small circle in the centre (fig.3). Connect each point to where the circle cuts the next radius on each side.

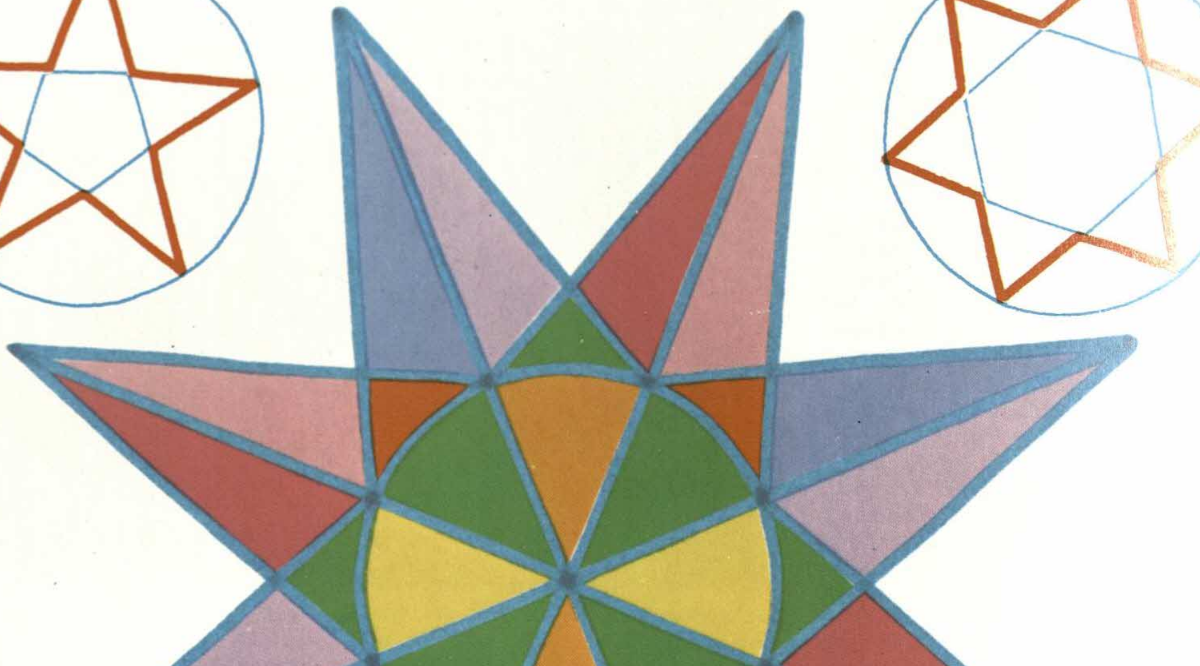
If you have an even number of points, you can vary this method by using two interior circles to give different thicknesses to alternate points (fig.4).

See Design Know-how chapter 8, page 224, for how to draw regular polygons.

1

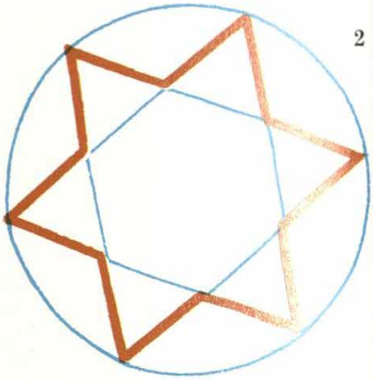


1. *A five-pointed star based on the shape of a regular pentagon.*



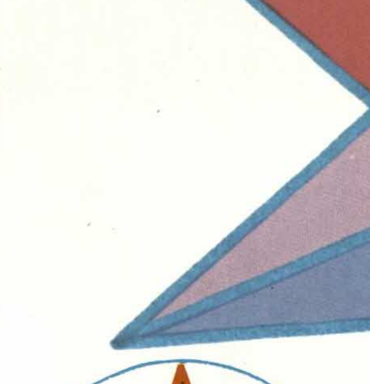
Below: a star design, elaborated into interrelated shapes based on geometric principles, combines triangles, circles and segments of a circle.

2



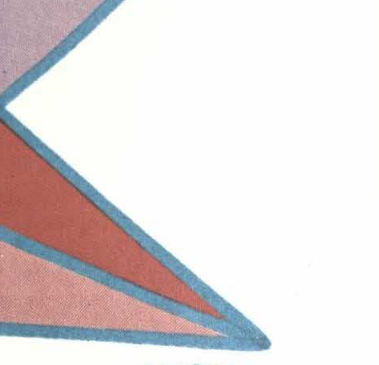
2. *This six-pointed star is based on the shape of a regular hexagon.*

3



3. *An eight-pointed star with narrower points based on an inner circle.*

4



4. *With two interior circles you can build up other star-like shapes.*

Creative ideas 10

Colourful necklaces and belts can be made with scraps of wool and washing line.

Keith Morris

Wool wrapping

A wool-wrapped necklace is simplicity itself to make and it really does use up wool scraps—all those odd short lengths that aren't quite long enough for granny square crochet!

To make a necklace you will need:

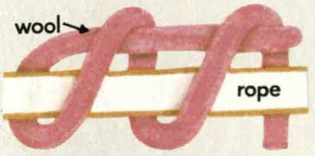
5mm ($\frac{3}{16}$″) diameter cord or clothes line, cut to length desired for finished necklace.

Scraps of wool.

Darning needle.

Sewing needle and thread.

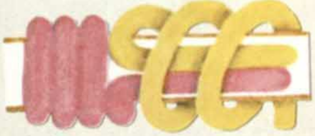
Begin wrapping 3cm (1″) from one end of the cord. Hold end of wool slightly down from this, return wool to starting point and begin to wind around rope and wool end (fig.1). Wind tightly and keep the strands very closely together. Do not wind to the end of the wool scrap, but leave a short end.



Victoria Drew

1. *Securing first end.*

To begin next colour, hold first colour end along cord and place second colour next to end of first colour, winding over the ends to secure (fig.2). Continue to wrap to within 3cm (1″) of cord end.



2. *Joining second colour.*

Joining the ends. Butt ends of cord together and, using a sewing needle and thread, sew ends together by running a few stitches through the centre of the cord. Wind wool around this join as before, but finish off by threading wool end through darning needle and pulling it back through the section just completed.

To make the belt. Make a bundle of four or five lengths of heavy knitting wool, cut long enough to tie around your waist leaving long ends.

Secure at one end by wrapping with wool and repeat at random along the length, sometimes putting several colours side by side and occasionally plaiting the strands that form the body of the belt to add variety.

Finish off each wrapped section with a darning needle, as described above. To finish, fray the end of the wool strands.

Wrapping square gift parcels

Paper 9

There is a multitude of papers specially designed to make the business of wrapping presents colourful and exciting. People even make money gift wrapping parcels professionally these days, as a shop service. As well as the papers sold in most stationery stores, there are many other attractive papers which work well for wrapping.

Suitable wrappings

Wallpapers or varnished shelf papers are both suitable, though they need extra care when folding. To prevent the paper from cracking at the corners, plan the shape of the parcel and score a line with a knife on the outside of the paper where you want to fold it. Do this lightly, just breaking the outer fibres.

Tissue paper is pretty but fragile and needs special care. Because it is so thin, a gift usually needs more than one sheet to disguise the contents, which gives the paper added strength and makes it easier to work with. You can achieve attractive effects by building up colours with several sheets and by overlapping or pleating them.

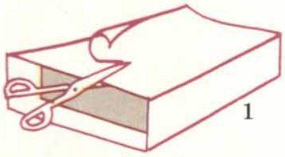
Crepe paper has the advantage of stretching, so you can pull it to fit the shape of the parcel very neatly. It comes in a vast range of colours and is also available in a double-sided quality, with a different shade on each side.

Wrapping papers. Even plain brown or white wrapping paper can look spectacular with contrasting ribbons or seals. Cellophane on top of any sort of paper gives a shiny glamour.

Posting parcels

When sending parcels by post, dispense with decorative ties and fancy ribbons and concentrate on making your parcel secure.

Follow the same basic procedure as below but use stout brown paper and finish with plenty of string.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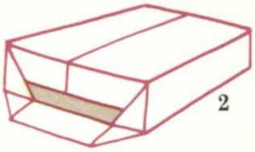
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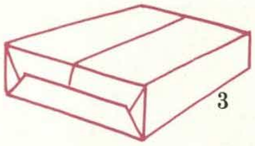

3

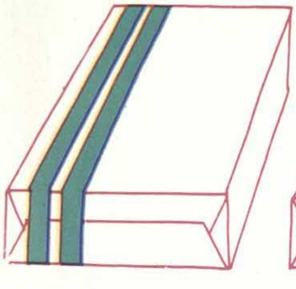
Rectangular boxes

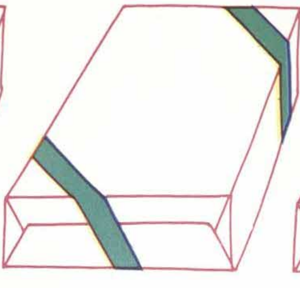
Centre the paper under the box and wrap it round the box. Trim the overlap so that it can be turned under slightly (fig.1).

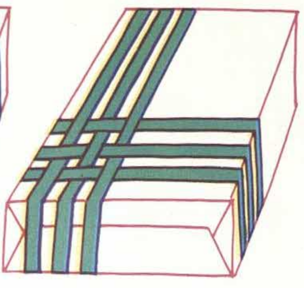
☐ Trim the paper so that it extends over both ends of the box by a little more than half the depth of the box.

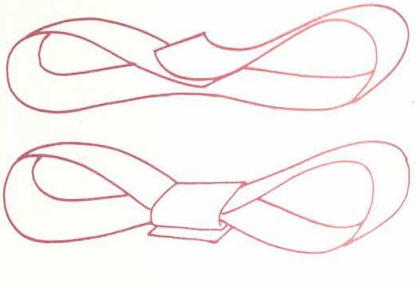
☐ Turn the overlap under and secure with concealed transparent sticky tape, either double-sided or folded double. Fasten the ends by folding in the sides, then turn the top flap down and the bottom flap up (fig.2).

☐ Secure with concealed tape (fig.3).





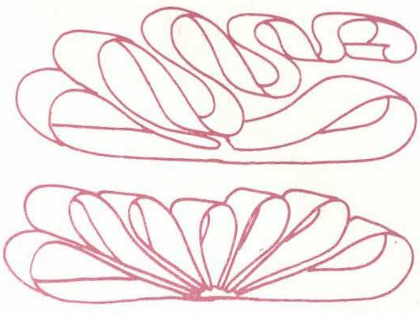


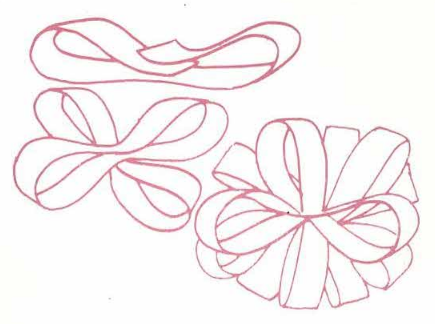


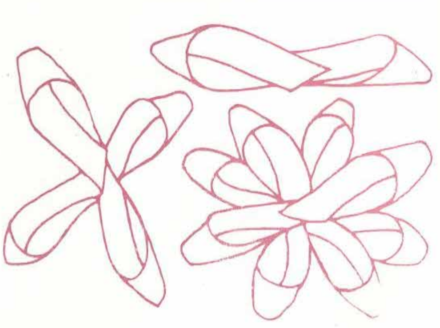
Five ways to use commercial, paper-backed ribbon—the kind that can be moistened and pressed together:

For posting. To decorate parcels so that they can be over-wrapped with brown paper, bind with flat bands.

Simple bow. Fold over ends of a piece of ribbon and glue. Wrap a short piece round centre, and glue.





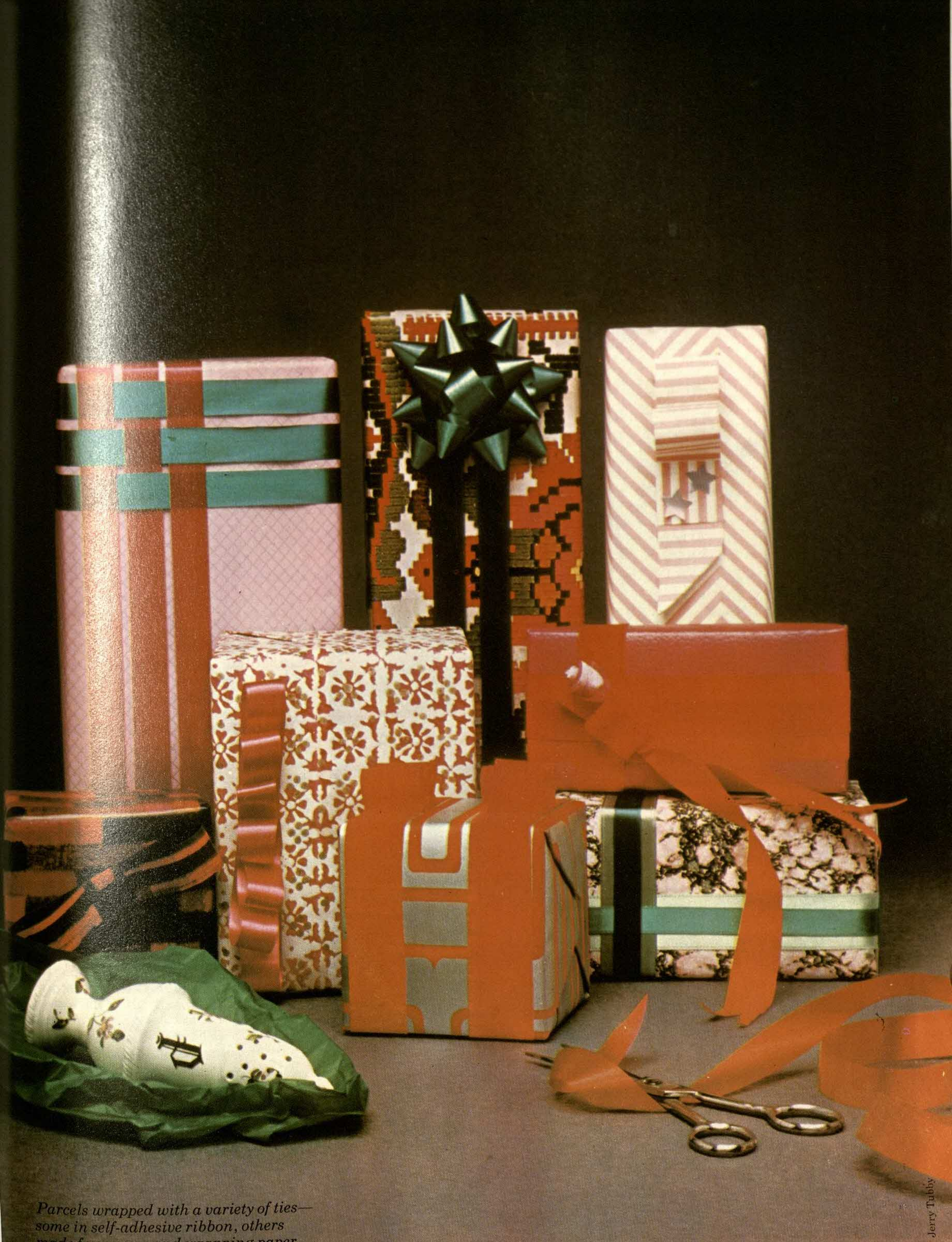


Tailored bow. Build up loops alternately to right and left, finishing with a small loop in the centre.

Knotless bow. Cut 8 or more strips of ribbon 28cm (11″) long. Fold each piece separately, and assemble as shown.

Star bow. Make 4 larger and 4 smaller loops, assemble as shown and finish with one centre loop.

Terry Evans



Parcels wrapped with a variety of ties—some in self-adhesive ribbon, others made from crepe and wrapping paper.

Jerry Tubby

Clay 7

Starting with real clay

Nelson Hargreaves

Real clay, as opposed to the synthetic self-hardening clays which contain chemical additives, is an entirely natural material. It is formed over thousands of years when rocks in the earth's crust are decomposed through weathering by wind and rain. The process is continual, and clay exists in abundance all over the world.

Some clays are found together with their partly decomposed parent rocks, and others are carried by streams and rivers away from their original beds to be deposited in wide valleys and open plains.

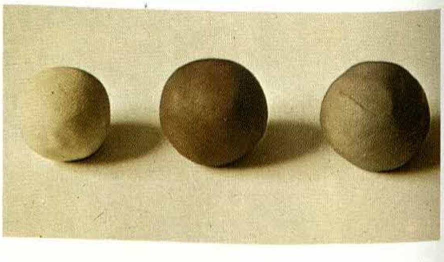
Natural clays vary very widely in their qualities and characteristics; for example, the clays that are deposited by rivers and streams are particularly valuable to the craft potter because they are easy to extract and handle and keep their shape well. Some clays work well for one technique and are impractical for others, and it is through experience and experimentation that potters over the ages have determined which are the best clays to use for which purpose.

Whichever type of clay you choose, if you have never worked with it before you will notice that it has a cool, malleable texture that makes it very satisfying to handle. It is this pleasing 'feel', together with the fascination of the initial plasticity and the dramatic changes that take place in the clay during the firing process, that have drawn craftsmen to work in this material over the centuries.

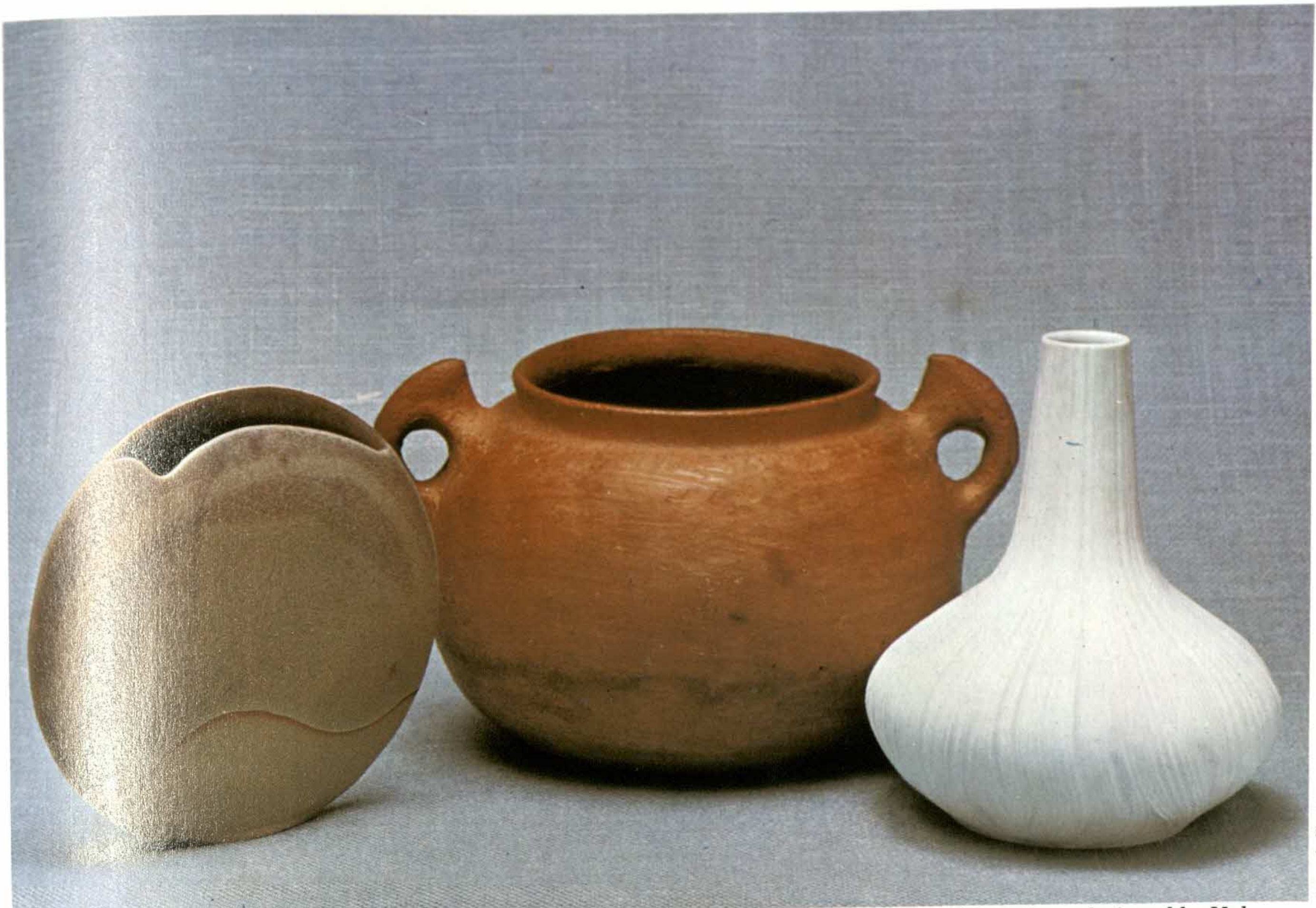
Finding and choosing clay

For the beginner, it is probably easiest to buy clay direct from a potters' supplier. Suppliers will always send catalogues listing their goods, so that you can see what is available and compare prices. Clay itself is very cheap and the most convenient quantity for the first order is probably a 25kg (56lb) bag. This may sound a dauntingly large amount, but it allows leeway for experimentation and even a small quantity of clay is surprisingly heavy.

Of the types of clay available, there are three main varieties from which the potter can choose—earthenware, stoneware and porcelain.



Above: left to right, samples of porcelain, earthenware and stoneware clays. Left. 'London blue' earthenware clay.



Johnnie Ryan

The left hand pot, designed by Val Barry, is stoneware. Centre: an unglazed, reddish earthenware cooking vessel made in Morocco. Right: porcelain from Wilson & Gill.

Earthenware. Earthenware clay is either red or white. It is fired at a low temperature, and is soft and porous. Because of the low temperature at which it is fired, the glazes which can be used on it are generally bright and shiny—so choose an earthenware clay for making eye-catching, colourful articles.

The relatively low temperature at which the chemical changes take place in earthenware clay to make it hard means that it is ideal for use if you do not have immediate access to a kiln. A garden bonfire, for example, provides enough heat to 'bake' earthenware pots. Earthenware clays can also be decorated in a variety of attractive ways without needing to be glazed.

All very primitive pottery, nearly all European pottery made up to the 17th century, and most of the pottery of Ancient Persia, Greece, Rome and Egypt is made from earthenware.

Stoneware. This clay looks grey in its raw state, and after firing at a high temperature it turns a buff colour, opaque and porous. It is a good clay to use for oven-to-table ware, and for individually modelled pieces if the design demands soft, muted colours. The higher firing temperature allows natural stone glaze to be used.

Porcelain. All translucent wares, whether from the East or West, ancient or modern, are made from porcelain clay. It must be fired at an extremely high temperature, and does not respond well to hand modelling. For these reasons, it is rather less commonly used by craft potters, although some potters now use a semi-porcelain clay which is specially prepared to make it easier to handle.

Porcelain is widely used in the pottery industry, where its whiteness and purity is valued for fine tableware.

Storing clay

All types of clay should be stored in a cool, damp place. Small quantities can be stored in polythene bags or a plastic dustbin with a well-fitting lid; large amounts in a cellar, airtight wooden box or a brick box. Always keep clay covered with damp cloths or sheets of polythene when you are not actually working on it, to prevent it drying out.

Digging your own clay

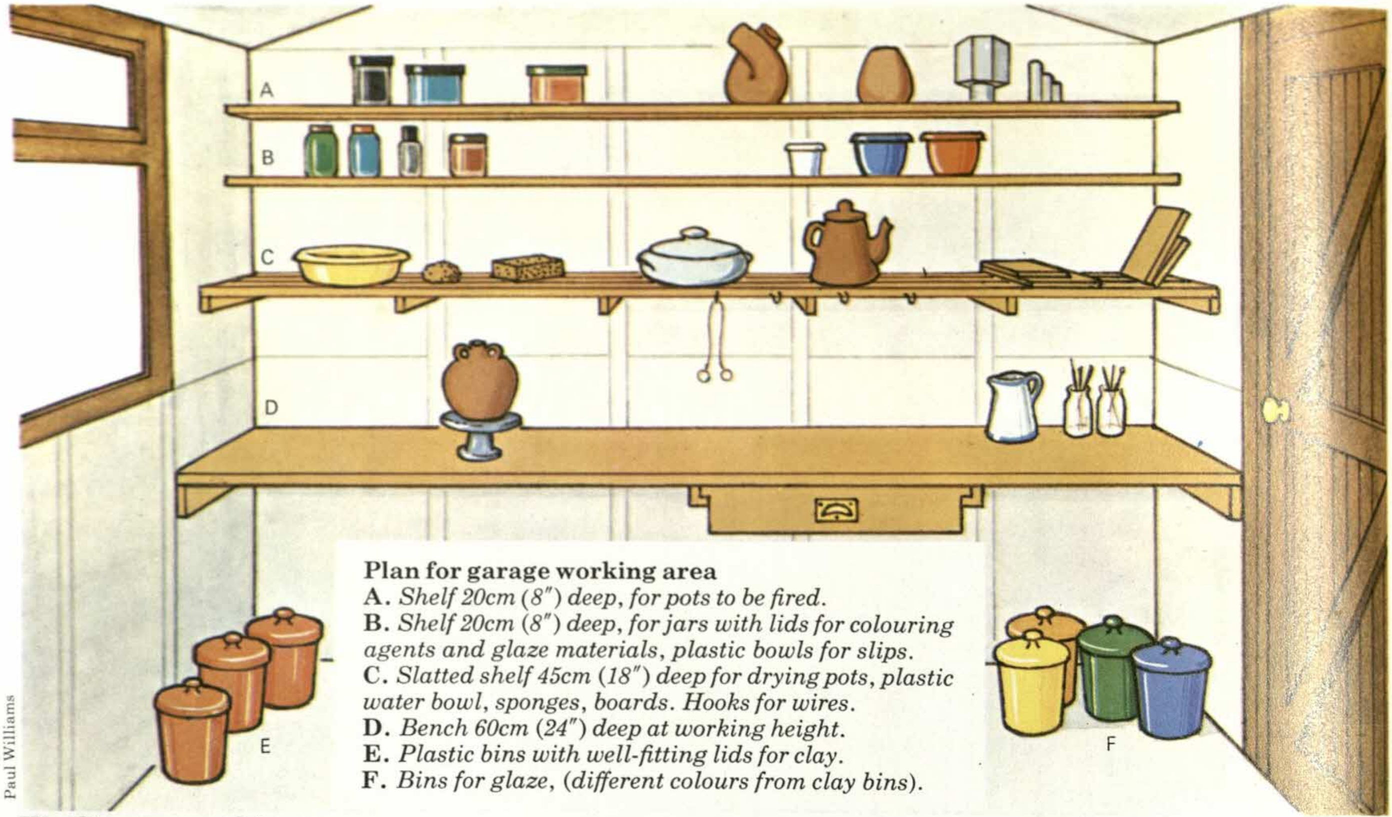
If you prefer it, it is possible to go out and dig up your own clay. It may not even be necessary to go into the country to find it—it is just as likely to exist in an urban garden.

Inquire locally about the type of ground on which you live, and pay particular attention to the banks of rivers and streams.

If you do discover your own supply, the clay will probably be dirty and very sticky, so before use it must be 'weathered'. This is a long and essential process, but there is no reason why your clay should not finally be as good as that bought from a supplier.

Leave the clay outside in loose heaps for at least a year. Sun, wind, rain and frost play over it and help to break it up and make it workable. After this weathering process, mix the clay with water until it is a thick liquid. Then pass it through a coarse sieve to remove stones and twigs. After sieving, leave the clay to settle and drain the water off the surface. These processes leave a mass of soft clay, which should then be left to dry out slowly until it is stiff. Once it has reached this consistency, it is ready for use and should be stored in the same way as bought clay.

The colour and handling qualities of the clay which these processes will yield depends, naturally, on the area in which you live. If it is possible to ask a local potter about its characteristics you may be able to benefit from his experience. Otherwise, experiment with it to see what effects you can achieve.



Plan for garage working area
A. *Shelf 20cm (8") deep, for pots to be fired.*
B. *Shelf 20cm (8") deep, for jars with lids for colouring agents and glaze materials, plastic bowls for slips.*
C. *Slatted shelf 45cm (18") deep for drying pots, plastic water bowl, sponges, boards. Hooks for wires.*
D. *Bench 60cm (24") deep at working height.*
E. *Plastic bins with well-fitting lids for clay.*
F. *Bins for glaze, (different colours from clay bins).*

Paul Williams

Finding a working area

When you begin to work with real clay, it is important that you have surroundings in which you can work comfortably. Clay can be a messy substance and, whilst it is possible, it may not be practicable to work with it on the kitchen table.

Consider any garage, cellar or lumber room space that you may have. If the weather is mild, you may even be able to set up your table out of doors.

The work space need not be large at this stage, but it is important to be able to work freely without worrying about mess. Always wear a large apron or overall to protect your clothes, and spread a sheet over the floor if you need to protect it.

For your basic work area at this stage, you will need a firm bench or table. As you will have to stand to work, the height is important—when you are standing up, you should be able to rest your hands comfortably on the table top. The table must have an absorbent surface—clay sticks to non-porous materials like plastic. Scrubbed wood is ideal, but if this is not possible, stretch fine hessian over the working surface and nail it so that it is secure.

Preparing clay for use

Even if you buy clay from a supplier, neatly wrapped in polythene, before you can make a pot it must be kneaded or wedged.

This is the process of working the clay into a suitable, even consistency. It disperses hard lumps and expels air from the clay, which is vitally important. Any air trapped in the clay will expand rapidly as it is heated during firing, and cause the clay to crack or explode.

Wedging

This is the best method to choose if the clay is full of hard lumps, or if additives like pigments are to be incorporated into the clay. The only tool required is a cutting wire. When the clay is thoroughly wedged, it can be kneaded lightly.

☐ Take a piece of clay no more than about 2kg (4lb) in weight at first, and bang it into an oblong shape.

☐ Lift the block of clay upright and, with the cutting wire, cut through the centre of the block lengthwise (fig.1).

☐ Let the top half of the block fall away, and pick up the lower half so that the cut side is facing you. Both cut sides now face you (fig.2).

☐ Lift one half in your hands above your head, and slam this piece down on the lower half (fig.3).

☐ Square the block off by tapping it on the table.

☐ Turn the block so that it is upright and repeat the process.

Do this about twenty times. It will mix the clay to an even consistency right through, and expel any air. It will also throw up stones and any other foreign bodies.

Kneading

If the clay is reasonably soft and even in consistency, you may only have to knead it. Kneading presses the air out, and forces closer together the tiny particles from which clay is made. This makes the clay more plastic.

Kneading employs a spiralling movement very similar to working dough—the weight of the body comes down through the shoulders and the wrists in a forward thrust. The aim is to turn the clay round and round, pressing it on to itself in a rhythmic arching movement.

☐ Lift the block of clay forward and, with the fingers behind the clay and the palms of the hands at the sides, press down and away with the heel of the thumbs (fig.4).

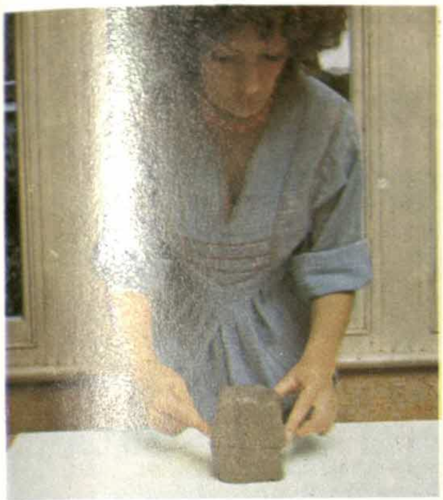
☐ Roll the clay up towards you and press down again, taking a fresh hold as you push (fig.5).

☐ Build up a rhythmic movement, spiralling the hands in a forward thrust away from you, and up, inwards and back towards you.

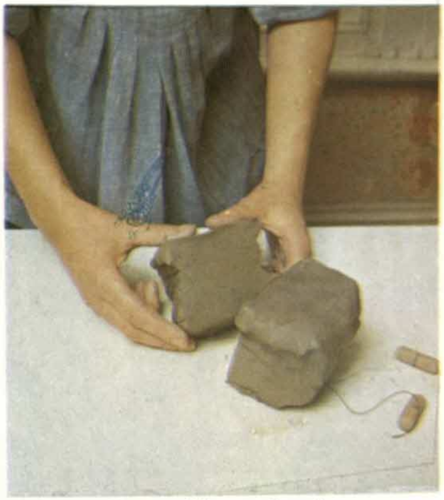
The palms must enclose the clay to stop it spreading sideways; keep your arms fairly straight and use your body weight to exert pressure. Gradually, a shape like a bull's head should emerge. It is not easy at first, but the correct movement comes with practice. About 100-150 turns should be sufficient—if the clay is worked too long it will dry and crack (fig.6).

☐ Finally, bang the clay into a square and slice it into quarters with the cutting wire. Check that the consistency is even and that the clay is free from bubbles inside (figs.7 and 8).

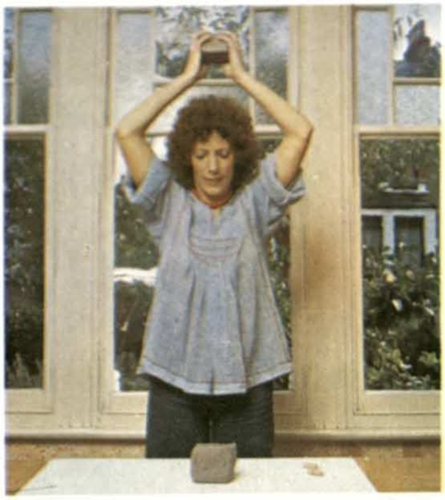
Bang the pieces firmly back together again, and the clay is ready to use.



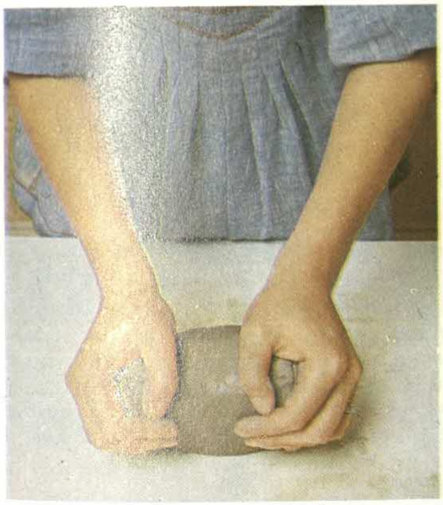
1. *Cut lengthwise through the block.*



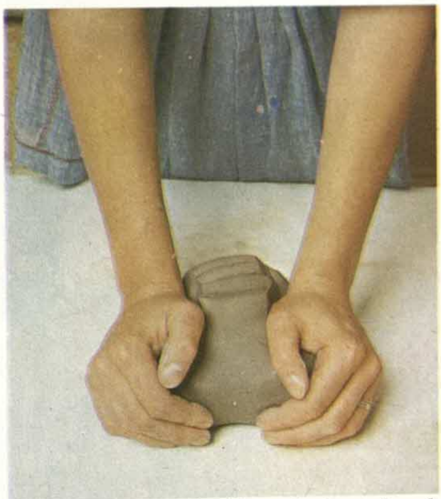
2. *Turn the cut sides so they face you.*



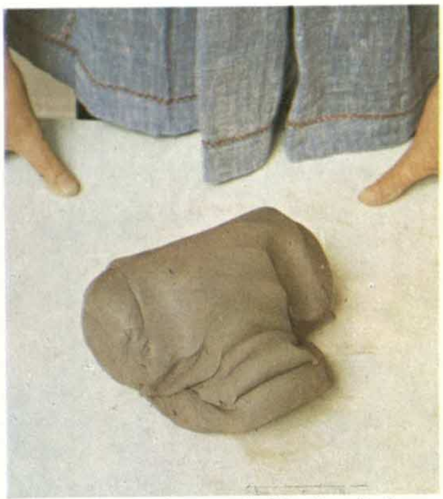
3. *Slam one piece down on to the other.*



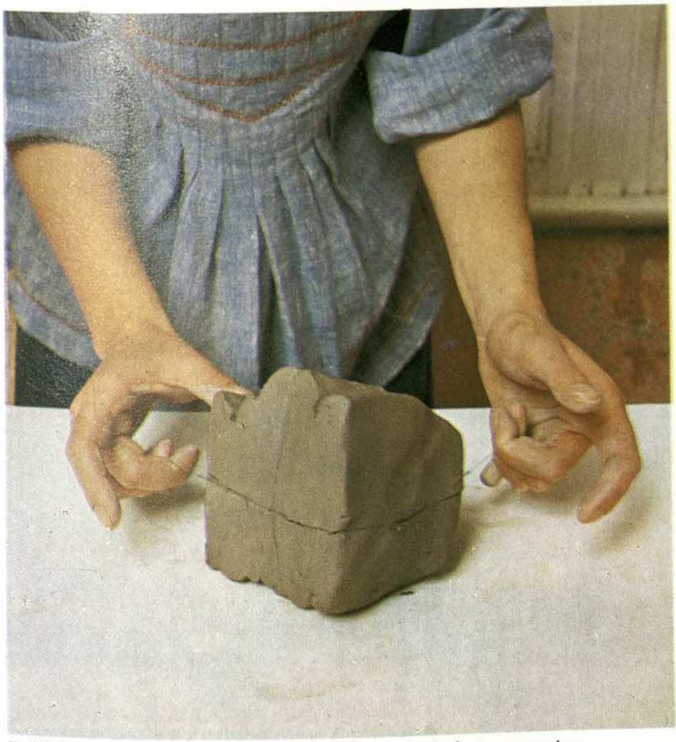
4. *Press the clay away from you.*



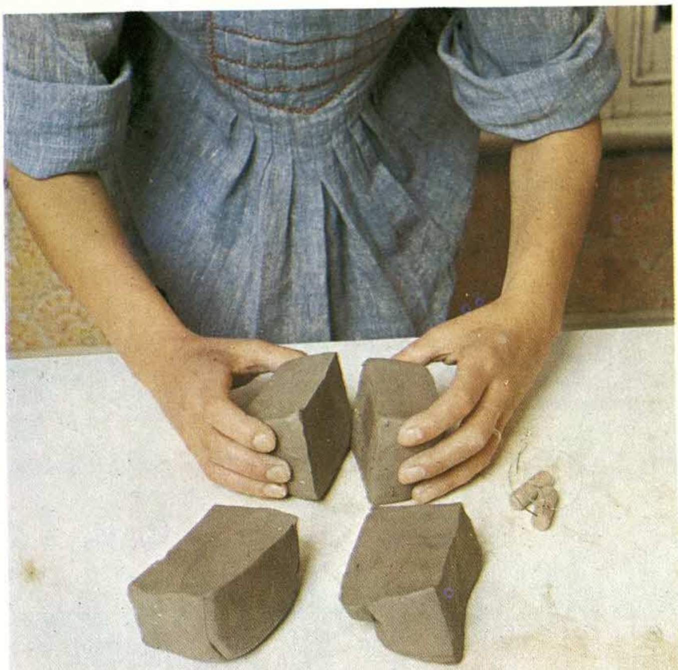
5. *Taking a new hold, push down hard.*



6. *Slowly work up a bull's head shape.*



7. *When the clay is well kneaded, slice it into quarters.*



8. *Check that there are no bubbles of air left in the clay.*

Nelson Hargreaves

Continuous chain stitch

Yarn — embroidery 2

Chain stitch has no single origin but can be traced to all parts of the world where ancient fabrics have been found. Chain stitch was found on basketwork from pre-dynastic Egypt (c. 350BC), on the earliest surviving Egyptian textiles, in graves in the Crimea dating from the 4th century BC and on some old textiles in China and Japan (7th-8th centuries AD).

The Chinese worked chain stitch with silk yarn on silk in a single line technique, widening or tightening the loop with a thread of uniform thickness to produce an effect of variable depths of colour and shadow. Some of the finest examples worked with chain stitch alone, using silk thread on satin, are 18th- and 19th- century Indian garments from Kutch.

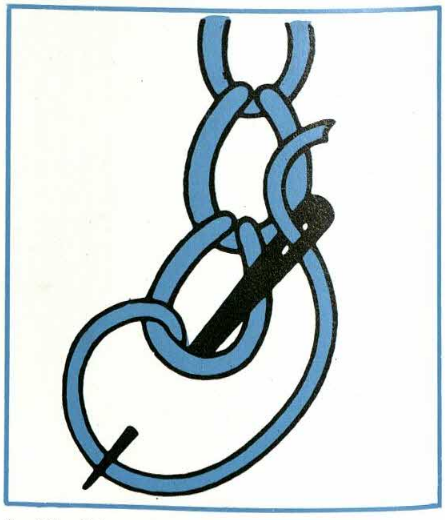
In mediaeval western Europe the grandest embroidery used more elaborate stitches and chain stitch only appeared on more humble objects. In 18th-century England chain stitch was revived and widely used, often under Chinese influence, to decorate silk coats and satin bedspreads. It appears independently in peasant work throughout the world.

Using chain stitch

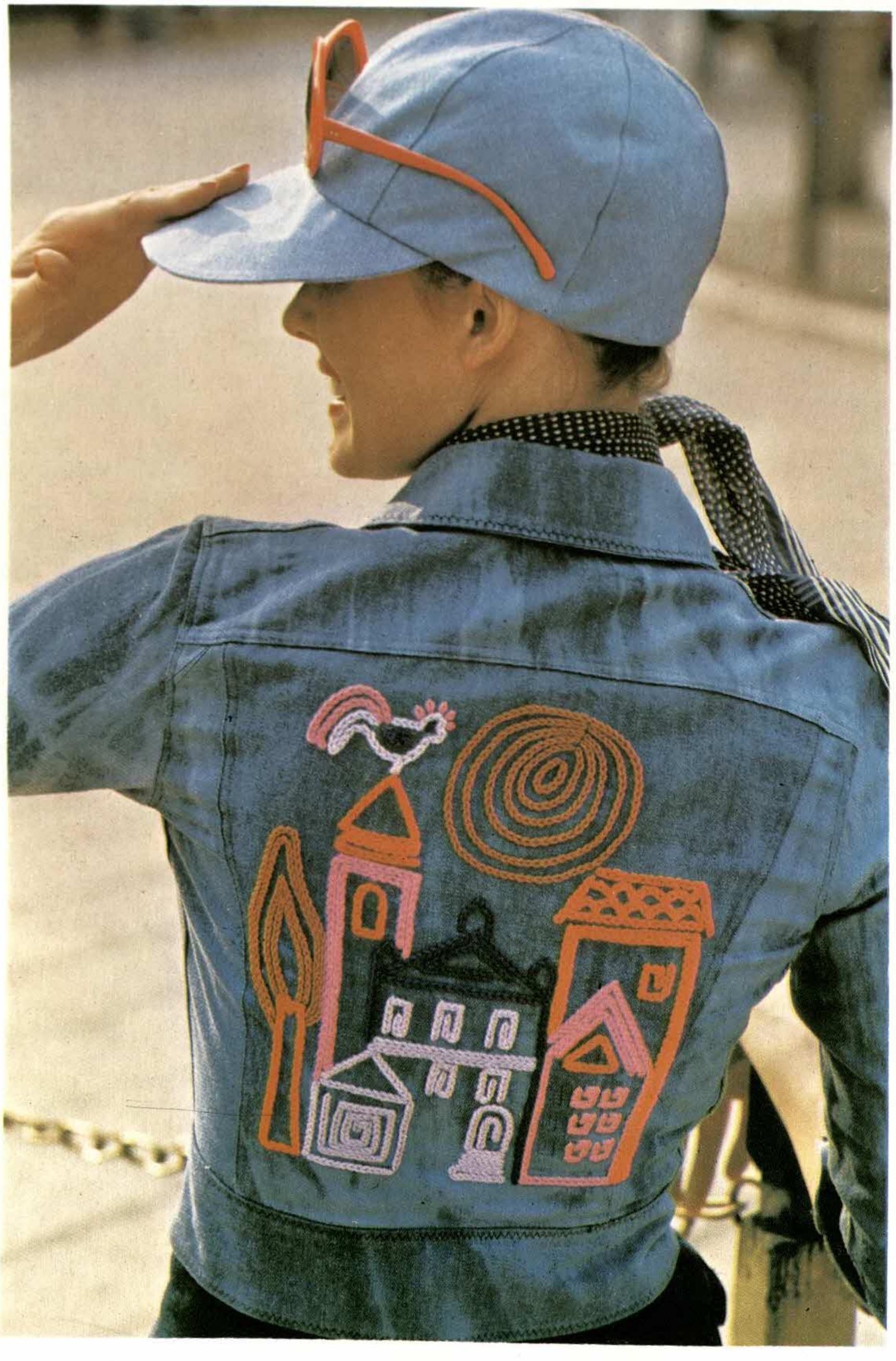
Chain stitch worked in lines and curves is very versatile. The stitch can be worked large or small to give a fine or a bold outline. For a regular appearance the proportions should remain the same; as a rough guide the width should be two-thirds of the length of the stitch.

Chain stitch adapts well to tight curves and can be worked round and round to partially fill in areas.

Chain stitch. When worked, this stitch makes a chain of loops on the right side of the fabric and a line of back stitches at the back. Bring the needle through on the line of the design, loop the yarn under the point of the needle and draw the needle through. Insert the needle close to where the yarn came out. Bring the needle through a little further along the line of the design, loop the yarn under the point of the needle and draw through. Continue in this way until the required length has been worked (fig.A).

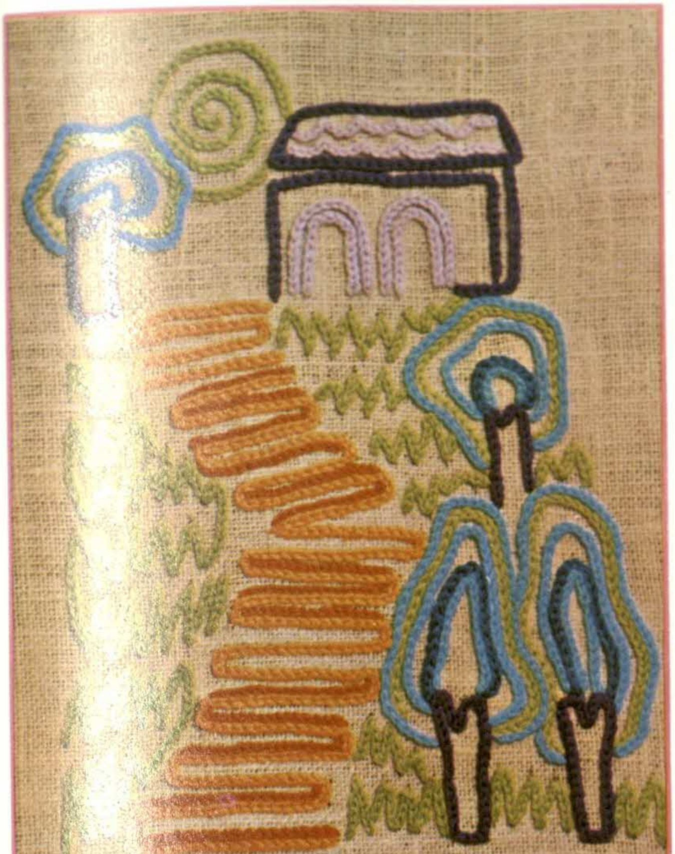


A. *Working a line of chain stitch.*

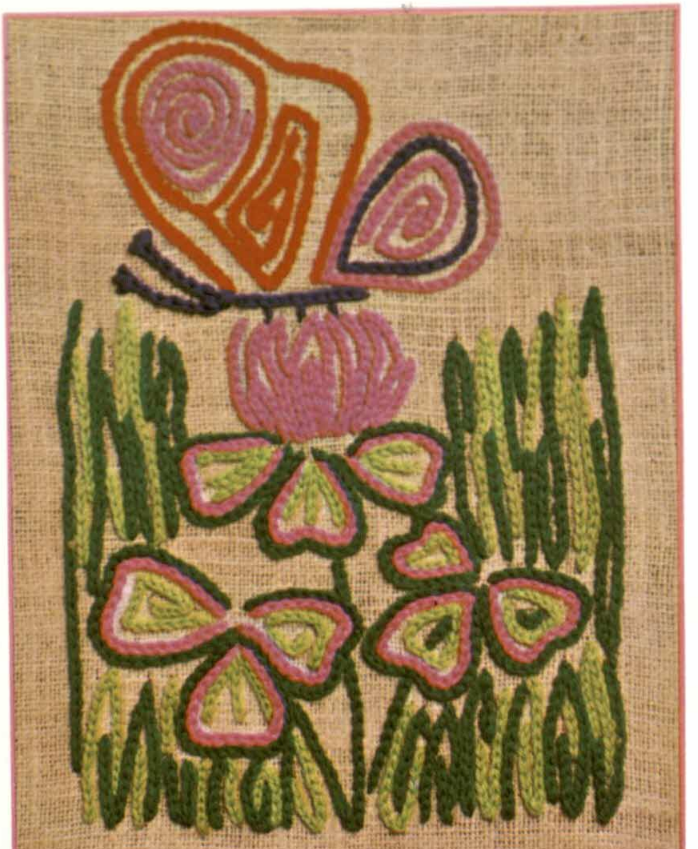


Don't turn your back on a design like this; copy it on to a jacket of your own.

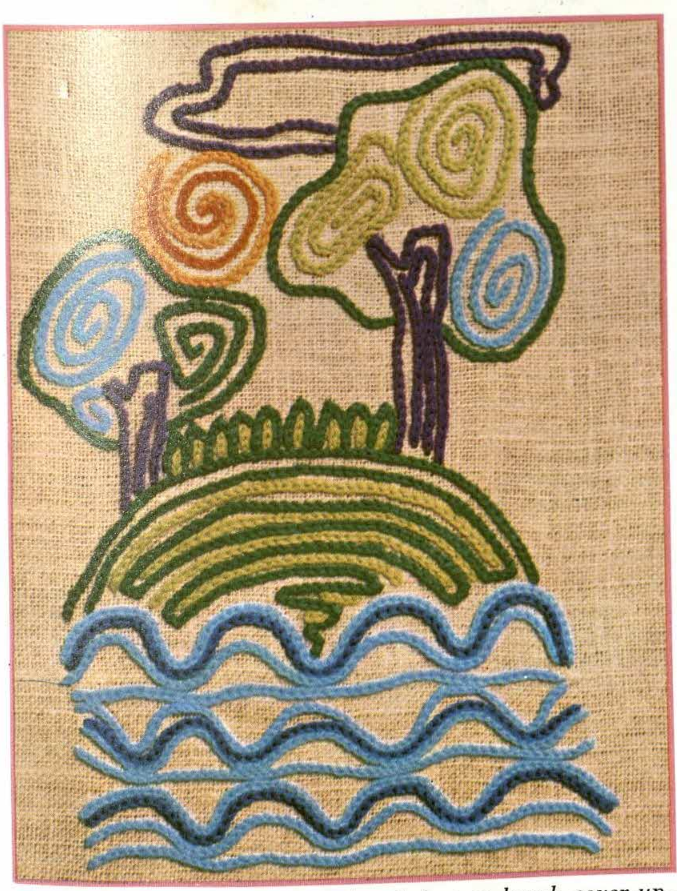
PAF International



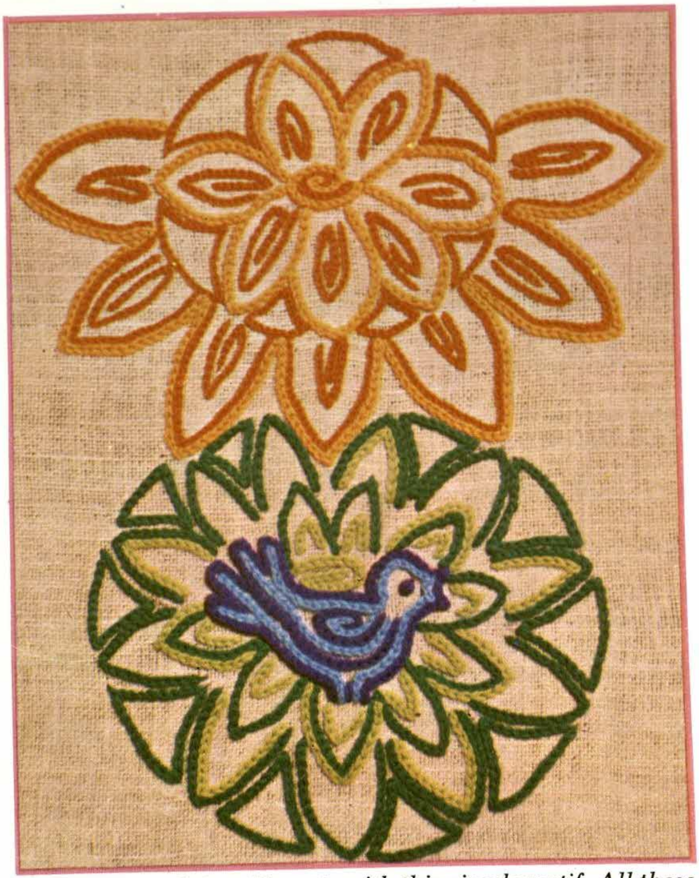
These designs are shown about one-third of their actual size, but they may be enlarged to the size you require.



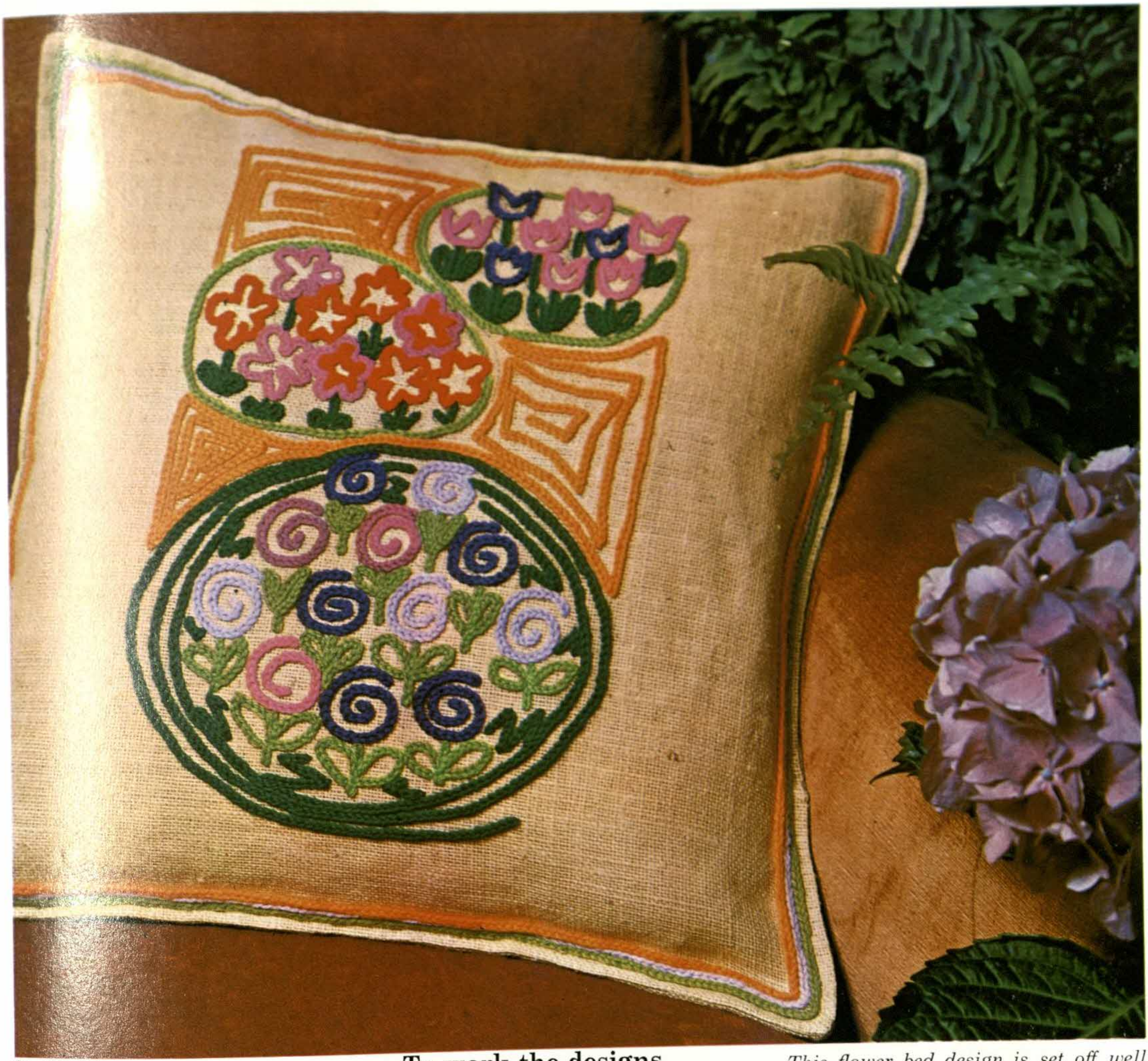
This pretty butterfly picture would be ideal for a girl's bedspread or embroidered on to a dress or apron pocket.



An appropriate design for a beach bag or beach cover-up—a colourful landscape scene with rolling waves.



Brighten up plain table mats with this simple motif. All these designs are worked in Soft Embroidery Cotton.



PAF International

This flower bed design is set off well by a natural-coloured background.

Suitable yarns

Small stitches worked in a thick yarn give a solid line, while larger stitches in fine yarn give an open stitch. Use these characteristics to their fullest advantage.

Any of the finer yarns previously mentioned are suitable for chain stitch but for quickly worked chain stitch use a thick embroidery yarn such as:

2 ply Crewel wool: a twisted, matt wool. Use one or, more usually, several strands.

Tapestry wool: a twisted, matt, separable wool.

Twilley's Lyscordet: a twisted knitting cotton.

Mercer Crochet Cotton: a fine knitting cotton.

Sudan Wool: a twisted, matt, separable wool.

Paton's Turkey Rug Wool: a twisted, matt wool for using on rug canvas.

To work the designs

Choose your fabric—perhaps a T-shirt, cotton jacket or whatever you wish to embroider on. Enlarge the design to the required size as given in Design know-how chapter 4, page 112. Transfer the design to the material in one of the ways suggested in Embroidery chapter 1, page 260.

If you are using thick yarn you will need a chenille needle.

Follow the lines of the design with closely worked chain stitch until you have covered them all.

Flower bed cushion

You will need:

Single thread evenweave linen, 26 threads per 2.5cm (1″), 36.5cm x 36.5cm (14$\frac{1}{2}$″x14$\frac{1}{2}$″).

Soft Embroidery Cotton, 3 skeins purple, 4 skeins red, 4 skeins mauve, 5 skeins lilac, 6 skeins light green, 6 skeins dark green, 6 skeins orange.

Fabric for back of cushion 36.5cm x 36.5cm (14$\frac{1}{2}$″x14$\frac{1}{2}$″).

Square cushion pad 35cm x 35cm (14″x 14″).

☐ Transfer the pattern on facing page centrally to the linen.

☐ Lightly mark a square 2cm ($\frac{3}{4}$″) in from outer edges with a transfer pencil.

☐ Work the design in fairly small chain stitch, working over 2 or 3 threads to make stitches uniform in length.

☐ Work around the edge of the square in chain stitch and work two more squares of chain stitch just inside the first.

☐ Make up into a cushion taking 1.25cm ($\frac{1}{2}$″) seams.

Designing with curved lines

Yarn — pin art 2

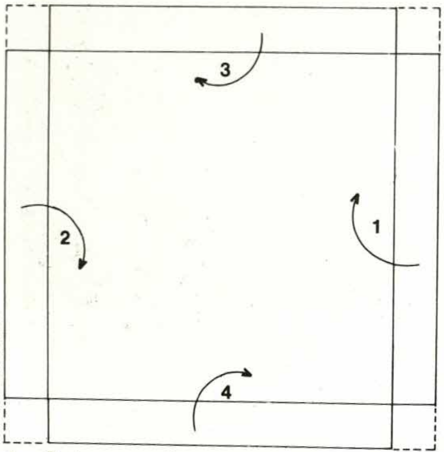
This chapter deals with variations on threading and positioning curves.

Curves and circles are simple to do and may be used either on their own or in conjunction with the straight line designs featured in Pin art chapter 1, page 164 to make superb pin art pictures.

Also included are sections on assembling the board and finally framing the finished picture.

Covering board with fabric

The fabrics most often used are felt and hessian but all fabrics should be treated in the same way. Cut the fabric 5cm (2″) larger all round than the board. Iron the fabric to remove any creases. Lay the fabric on a flat surface and place the board in the centre of it. Cut away the corners as shown (fig.1). This removes the bulkiness at the corners.



Trevor Lawrence

1. *Cut away the corners of the fabric, fold the edges to the back of the board and glue neatly in place.*

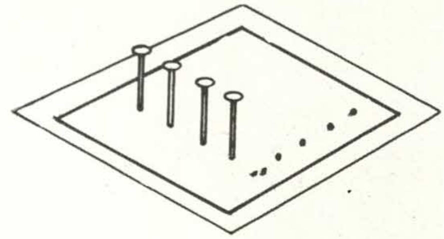
Spread clear glue fairly thinly round the edges of the board that are uppermost. Lift the fabric over the sides of the wood and press it against the glued surface, pulling the fabric taut as you do so.

If the material is very thin, fold it like you would when wrapping a parcel. Glue the fabric where necessary to hold it together.

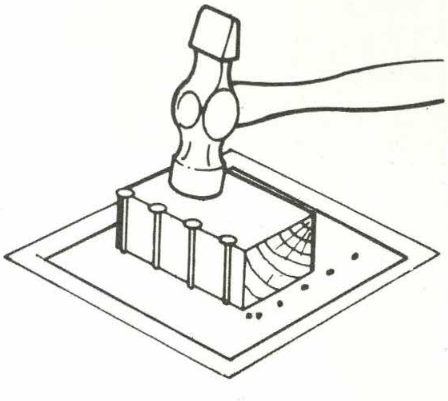
Material that frays should be spread with glue along the cutting line. Allow the glue to dry then cut along the line and glue to the board as above.

Hammering pins into board

For a really professional finish to your picture the pins should be of a uniform height. To achieve this, place the design, drawn on paper, over the board and hammer pins lightly in place (fig.2). Then place a depth gauge—a piece of wood—next to the pin. Hammer the pin in place until the pin head is level with the piece of wood (figs. 2 and 3).



2. *Hammer pins lightly into board, following line of design.*



3. *Place the depth gauge against several pins and hammer each one into the board until it is level with the gauge.*

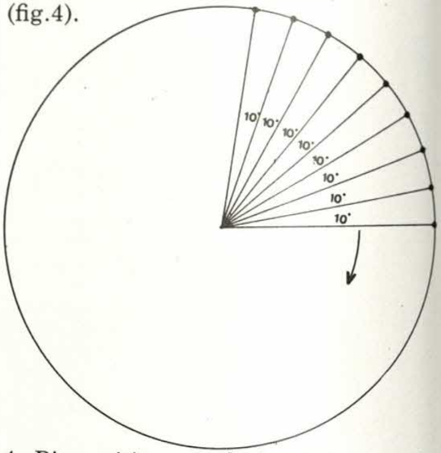
Winding the yarn

Sometimes a simple design is made more attractive by winding the yarn around the pins as if making the top part of a figure of eight. Crossing the strands will also prevent the yarn from slipping off, which sometimes happens with small-headed pins.

Dividing a curve

Dividing up the curve equally isn't quite so easy as dividing up straight lines, but you don't have to be an expert in higher mathematics to achieve a good result.

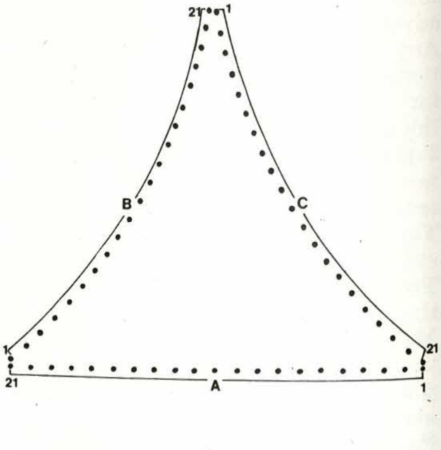
The circumference of a circle can be divided up by using a protractor. Mark off the pin positions so that there are an equal number of degrees between each. This is more fully explained in Design know-how chapter 7, page 196. For 36 points, for example, the pin positions are at 10° intervals, as shown (fig.4).



4. *Pin positions marked at 10° intervals.*

Alternatively, if a set number of points are required on any section of a curve,

Triangular design. Fig. 5 shows a triangular shape with two curved sides. Work out the pin positions with dividers, then thread in the same way as given for the basic triangle in Pin art chapter 1, page 164—ie A1 to B1, B1 to C1, C1 to A2, A2 to B2, B2 to C2, etc. In this case, where the curves are concave, make sure that the yarn is about half-way down the pin to prevent it jumping off the pin head. And also make sure to bring the yarn inside the curved line of the pins so that the curve is clearly outlined.



Graham Elson

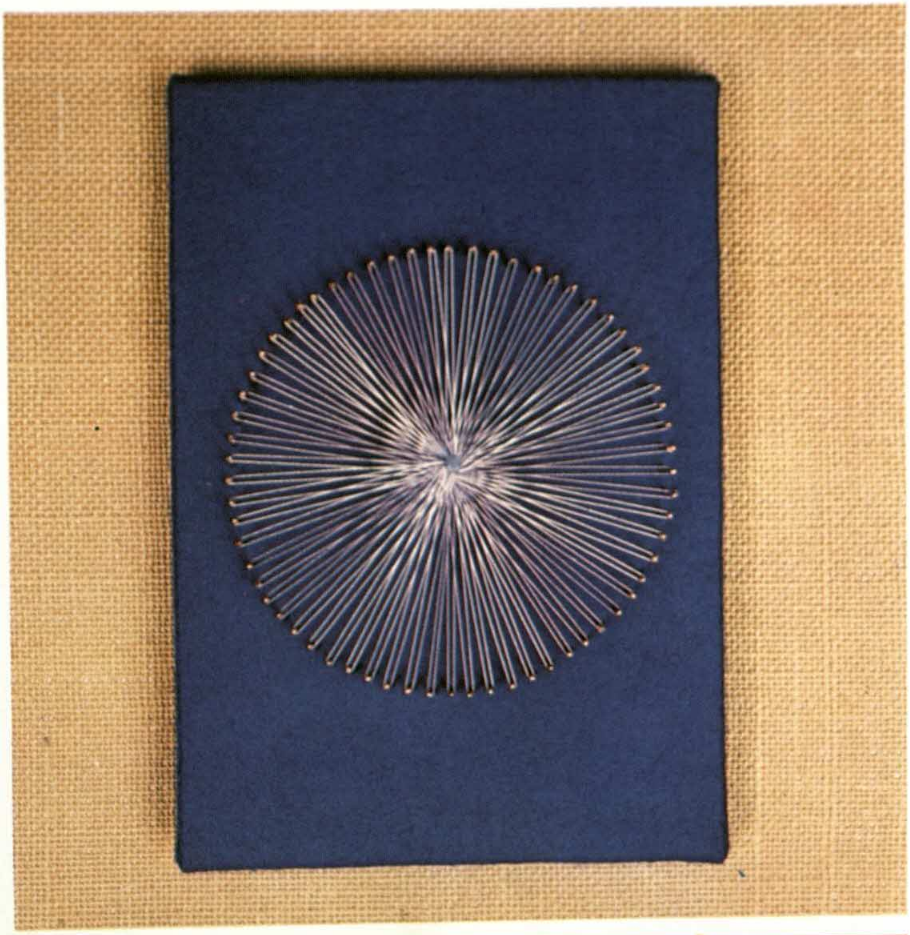
5. *Triangular design with curved sides.*

dividers can be used. Set the dividers at a certain distance apart. To get a rough idea of how wide to set the dividers, measure the length of the curve with a tape measure and divide the total length by the number of equal spaces you wish to have along the line. This gives an approximate width for the dividers then increase or decrease the distance until you have the correct number of points on the curve. This is a slow but accurate method.

The basic circle sample, wound in thin, shaded yarn, produces a wheel effect. The background is royal blue felt. Divide the circumference into 65 pin positions with dividers. To do this work out the circumference of the circle using this formula: 2 x $\frac{22}{7}$ x the radius. Then divide 65 into the total: this gives you the width at which the divider points should be.

Hammer a large-headed nail into the centre of the circle.

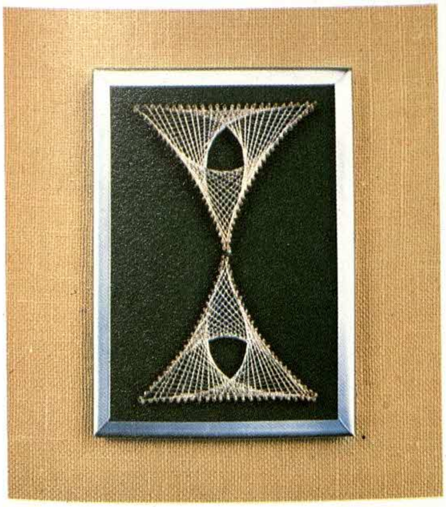
To thread the design tie the yarn on to the large nail, wind the yarn round any pin on the circumference and bring it back to the centre. Wind the yarn round the next nail on the circumference, working clockwise, until the 65 pins are used up, The large head of the centre nail will prevent the yarn from slipping off.



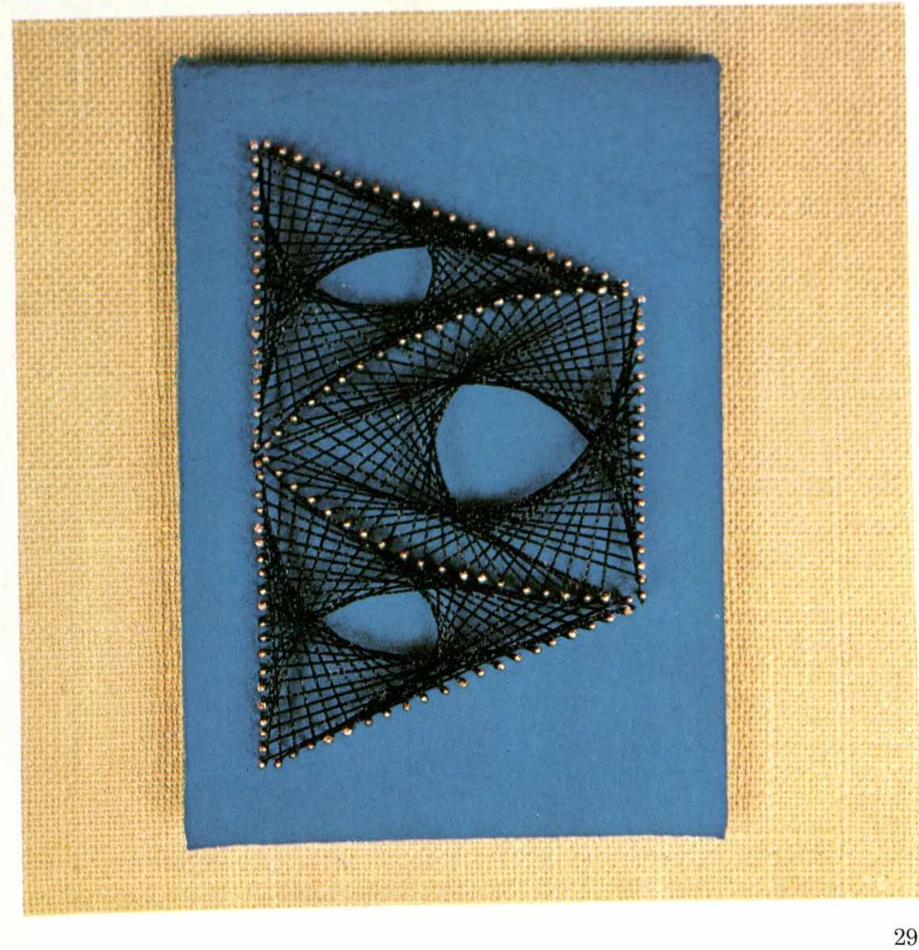
A simple way to wind a circle.

The design incorporating straight and curved lines (right) is threaded as three separate triangles with a black lurex yarn on a turquoise felt backing. The curved lines are common to all the triangles and are engaged with yarn twice.

The two triangular shapes with curved sides, in silvery yarn (below), are arranged so that one is a reflected image of the other.



Two triangles with curved sides.

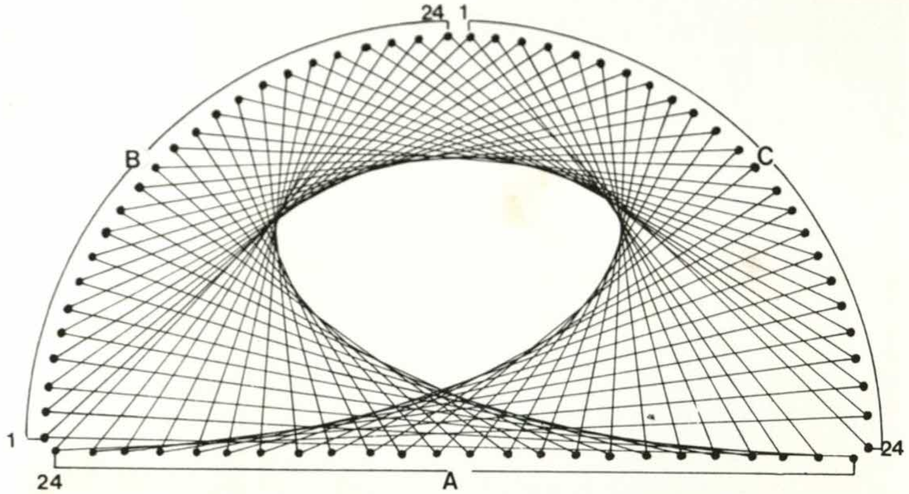


A variation on the triangular shape.

Graham Elson

Semi-circle. Fig.6 shows a semi-circle divided up into three sections: A, B, and C; each row has the same number of pins. The semi-circle is threaded in a continuous sequence—A1 to B1, B1 to C1, C1 to A2, etc.

To wind the sample on the right, draw two circles and put in pins along a diameter and thread the resulting semi-circles separately in a different coloured yarn so that they share a common base. This design looks effective using maroon and pale pink yarn on black felt.



A simple design using semi-circles.

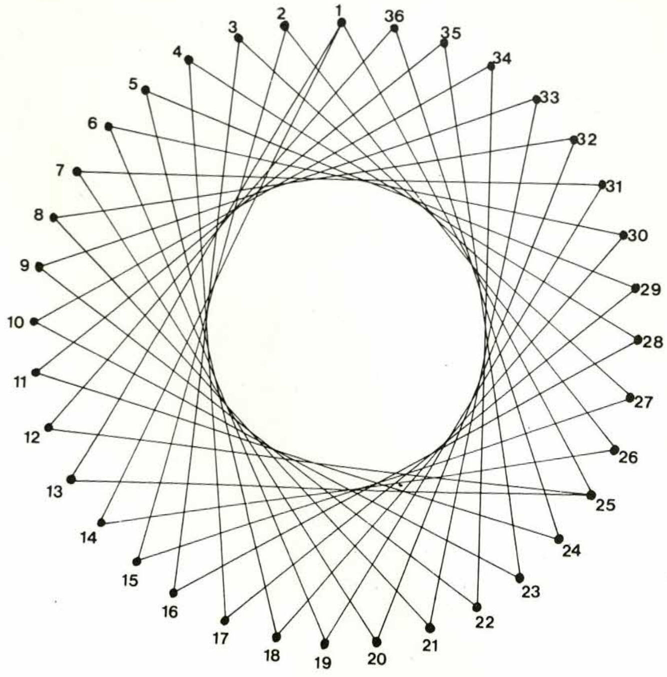
6. *Semi-circle divided into three.*

Circles. The method of threading a circle, divided up into 36 equally-spaced points as shown in fig.4, can be seen in fig.7. Tie the yarn to pin 1 and pass round 13 then round 25, back to 1, round 14, then to 26, and on to 2, round 15, then to 27, and on to 3 and so on, each time having eleven pins between each winding. If there are fewer pins between, the size of the centre hole increases and if there are more pins between, the centre hole becomes smaller.

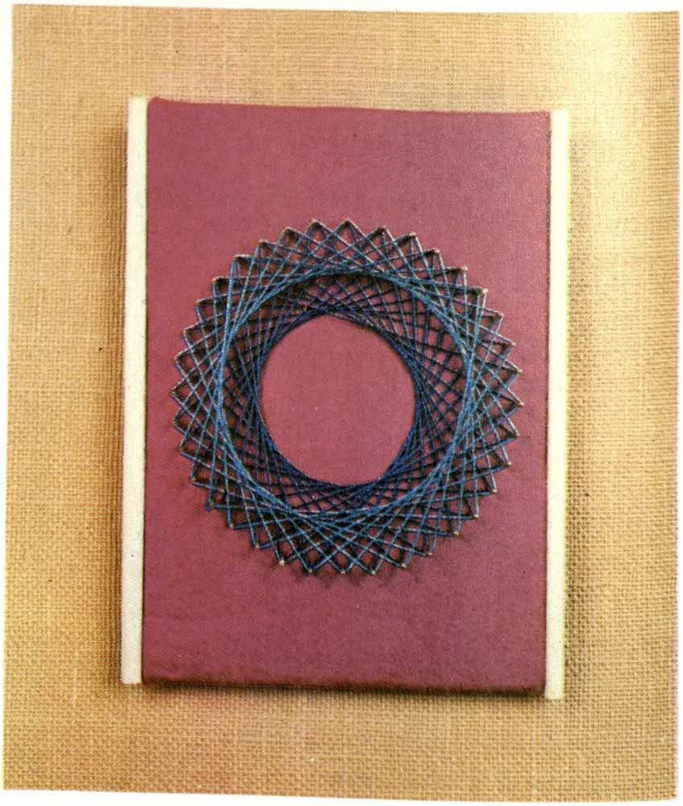
However, you must use multiples of the total number of pins, ie for 36 pins you could wind round every 12th, 9th or 6th pin either three times, four times or six times. If you tie on at 1 and pass the yarn round 10, then 19, then 28, back to 1, round 11 then to 20, on to 29 and wind on to 2 etc, so that there are eight pins each time between each pin that you wind around, this means that the centre hole increases (see below).

By threading the circles twice, perhaps using two colours, and varying the number of pins left between each pin that you wind around, you can form a design of concentric circles.

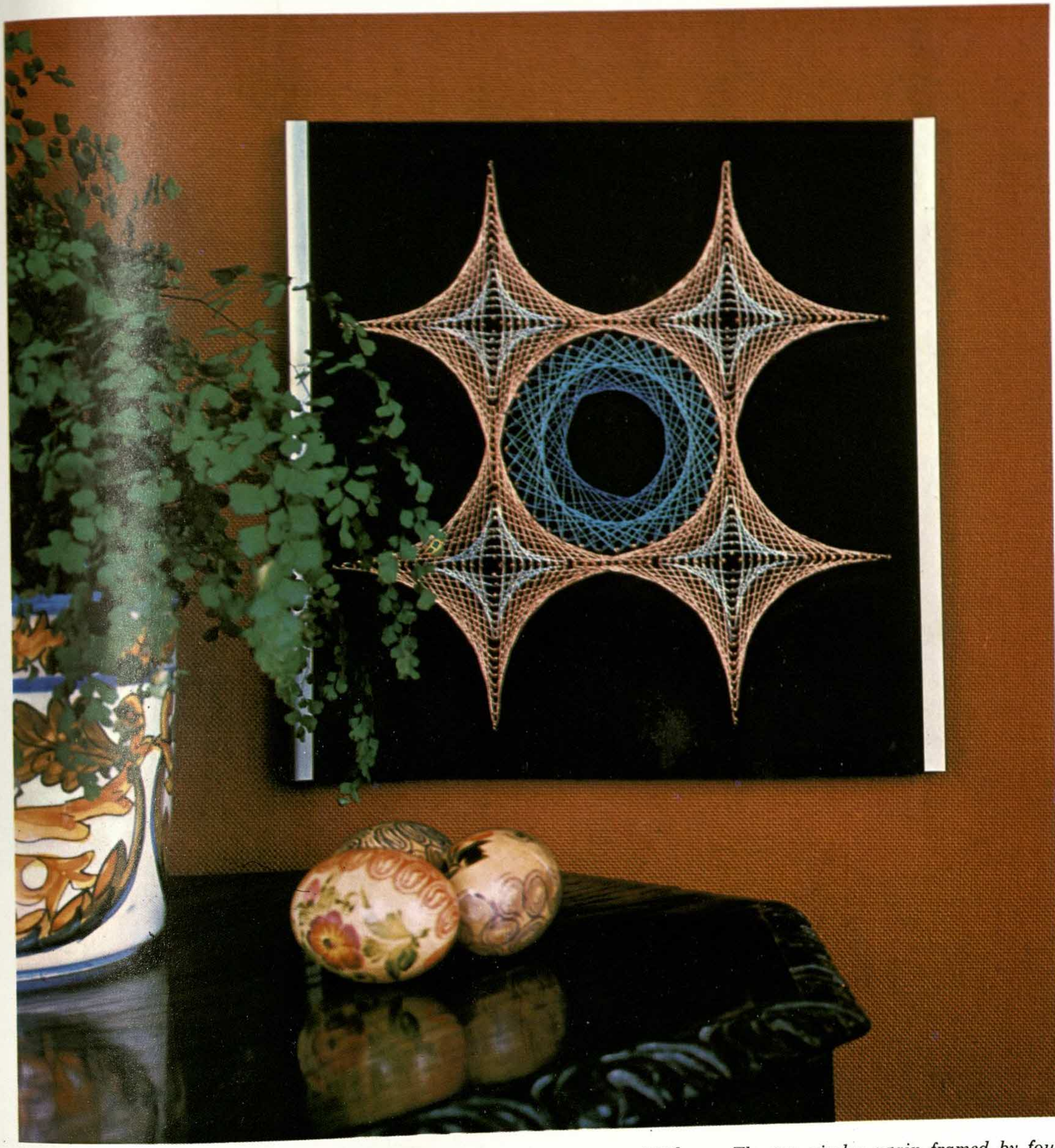
Colours of a similar tone make a subtle design, for example shades of blue and mauve. On a large scale, you can build up circles in many colours, widening the centre hole each time. Wind the circle with the smallest hole first.



7. *The 36-pointed circle with 11 pins between each winding.*


Two circles showing how the centre hole can be expanded.

Graham Elson



Graham Elson

The two circles again framed by four bright star shapes to make a picture.

Framing the picture

A simple frame will set off your pictures to advantage. One neat way of doing this is to stick a length of rope round the edges (sample above left).

Another simple method is to nail a length of wood, 12mm ($\frac{1}{2}$″) thick, to the two vertical sides of the board (left). Remember to rub the cut ends of the wood with sandpaper to make them smooth. This method means you get an effective finish without having to mitre the corners of the frame.

For a more traditional finish use a plastic surround—the one on p.293 has a metal finish—and mitre the corners to give a complete frame. There are numerous attractive mouldings available to give a stylish finish.

Moon and Stars picture

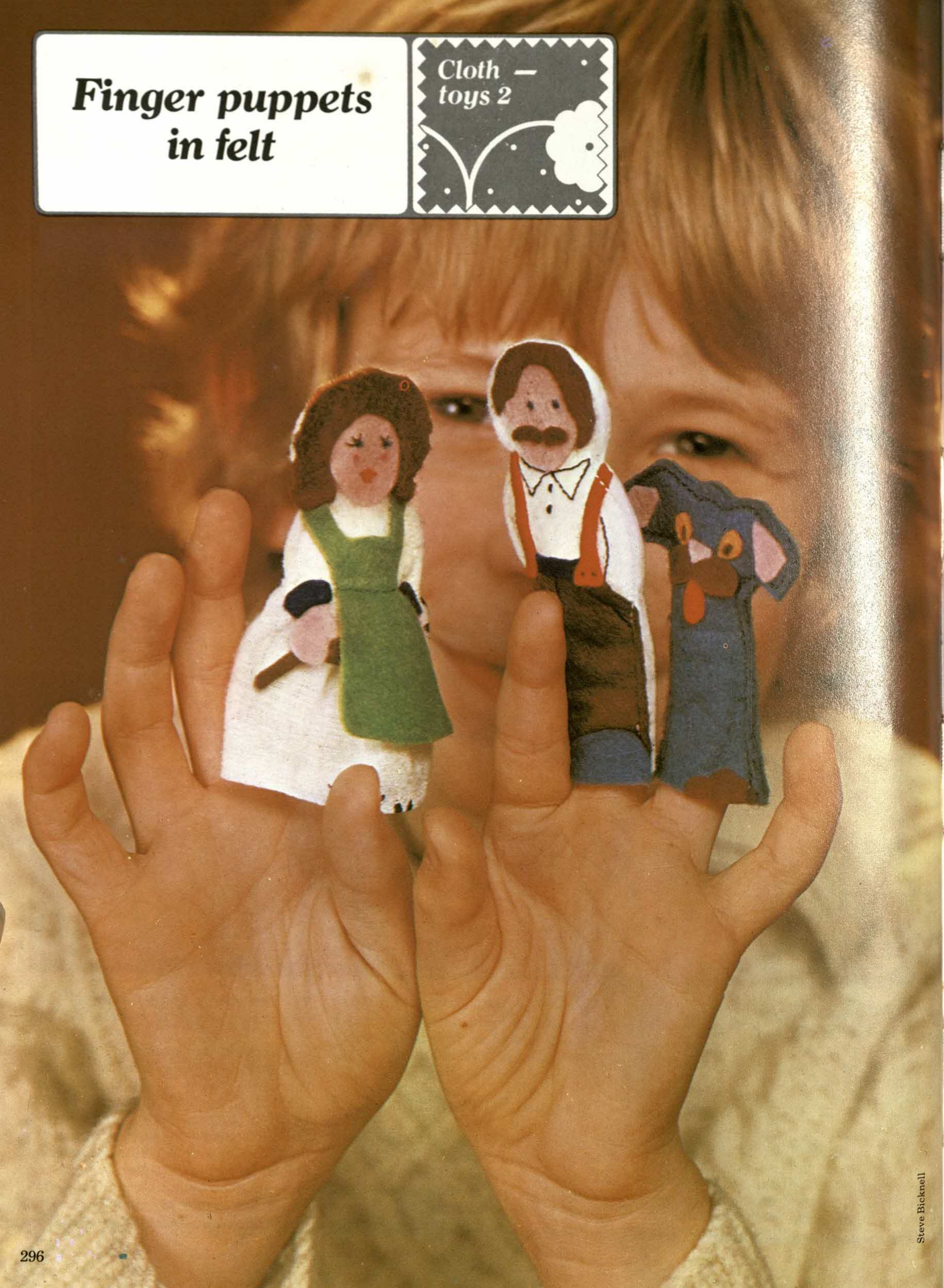
You will need:

Hardboard 35cm x 35cm (14″x14″).
Black felt 40cm x 40cm (16″ x 16″).
272 copper panel pins. Graph paper.
Twilleys' Goldfingering in 4 colours.

Cover the board with the felt. Draw a 12.5cm (5″) square on the graph paper and mark 25 nail positions along each side. Extend the lines 9cm ($3\frac{1}{2}$″) to make the shape above. Mark 17 nail positions along each of the extended lines. Using a compass draw a circle which falls just inside the square and mark off 36 nail positions. Wind the stars as shown in Pin art chapter 1, page 164, changing the colours as shown above. Wind the circle as given left. Glue strips of picture frame to two sides.

Finger puppets in felt

Cloth — toys 2



Steve Bicknell

Generations of children have enjoyed playing with puppets. Finger puppets are the simplest type to make and are easy for a small child to manipulate. Trace patterns and instructions are given here for a whole family.

To make finger puppets

You will need:

For each finger puppet: 10cm (4″) square of white felt (grey felt for dog).

Oddments of pink and other coloured felt.

Scraps of fabric.

Scraps of lace 1.5cm (½″) and 6.5cm (2½″) wide for baby and granny.

Matching and contrasting thread.

Fabric glue.

Felt pens or non-toxic crayons.

Small piece of fuse wire for granny's glasses (draw these instead if the puppet is for a young child).

Tracing paper for patterns.

Father

Trace off all pattern pieces for father plus a body shape and face.

☐ Cut out two body shapes from white felt, a face from pink felt and all other pieces from felt oddments.

☐ Position trouser piece on to one body piece and stitch down centre and along top of pockets. Stick belt at top of trousers and sew on braces with running stitches to cover the ends of the belt.

Using contrasting thread, embroider arms and shirt collar in back stitch and buttons in satin stitch.

☐ Stitch the body shapes together leaving bottom end open. Glue on shoes to cover bottom of trousers.

☐ Draw the features on to the face and glue to head. Glue hair and moustache into place.

Mother

☐ Trace off pattern pieces for mother plus a body shape and face.

☐ Cut out two body shapes from white felt. From pink felt cut out two hands and one face. Cut all other pieces from oddments of felt.

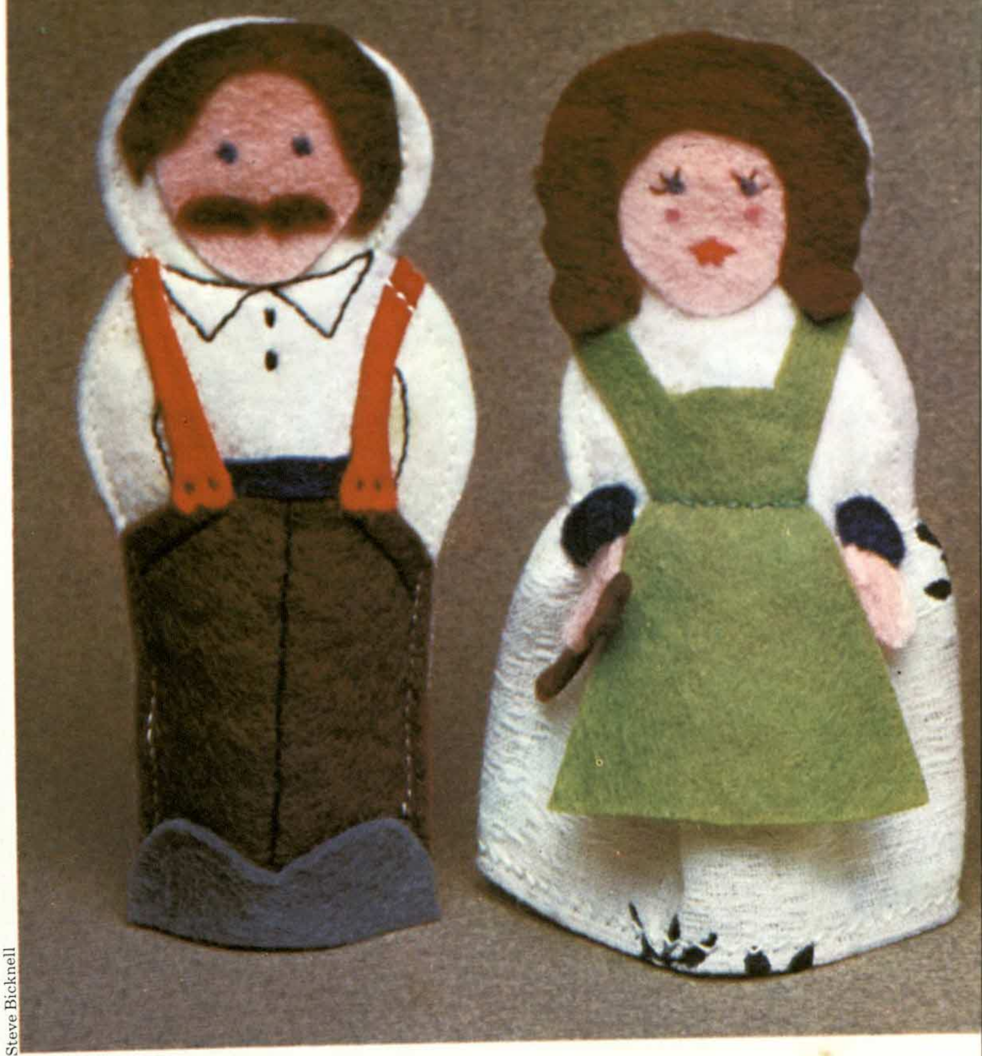
☐ Stitch the body shapes together, leaving bottom end open.

☐ For the skirt, cut a piece of fabric 6.5cm (2½″) deep and 15cm (6″) wide. Join back seam and neaten hem edge.

☐ Work a row of gathering 3mm (⅛″) from waist edge and turn in raw edge.

☐ Position skirt on puppet so that hem of skirt is level with open end of puppet and pull up gathering to fit round waist. Stitch skirt to body at waist, taking care not to stitch the back and front of puppet together.

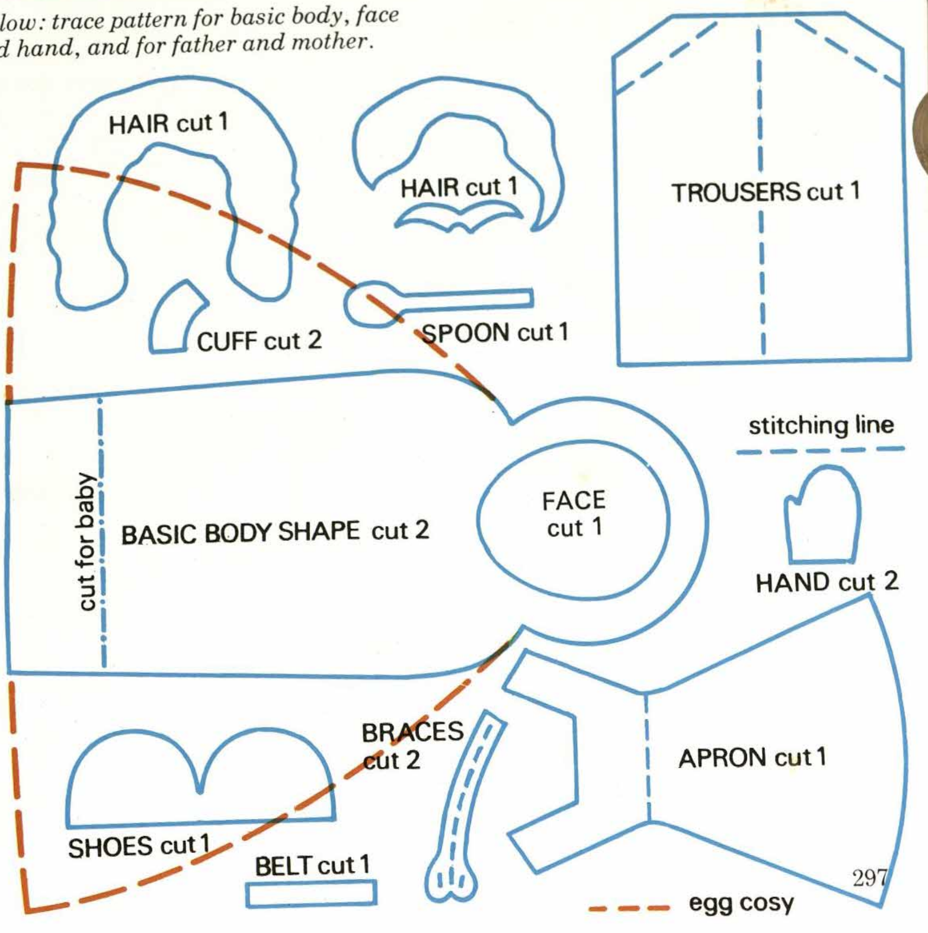
☐ Stitch apron to front of body across



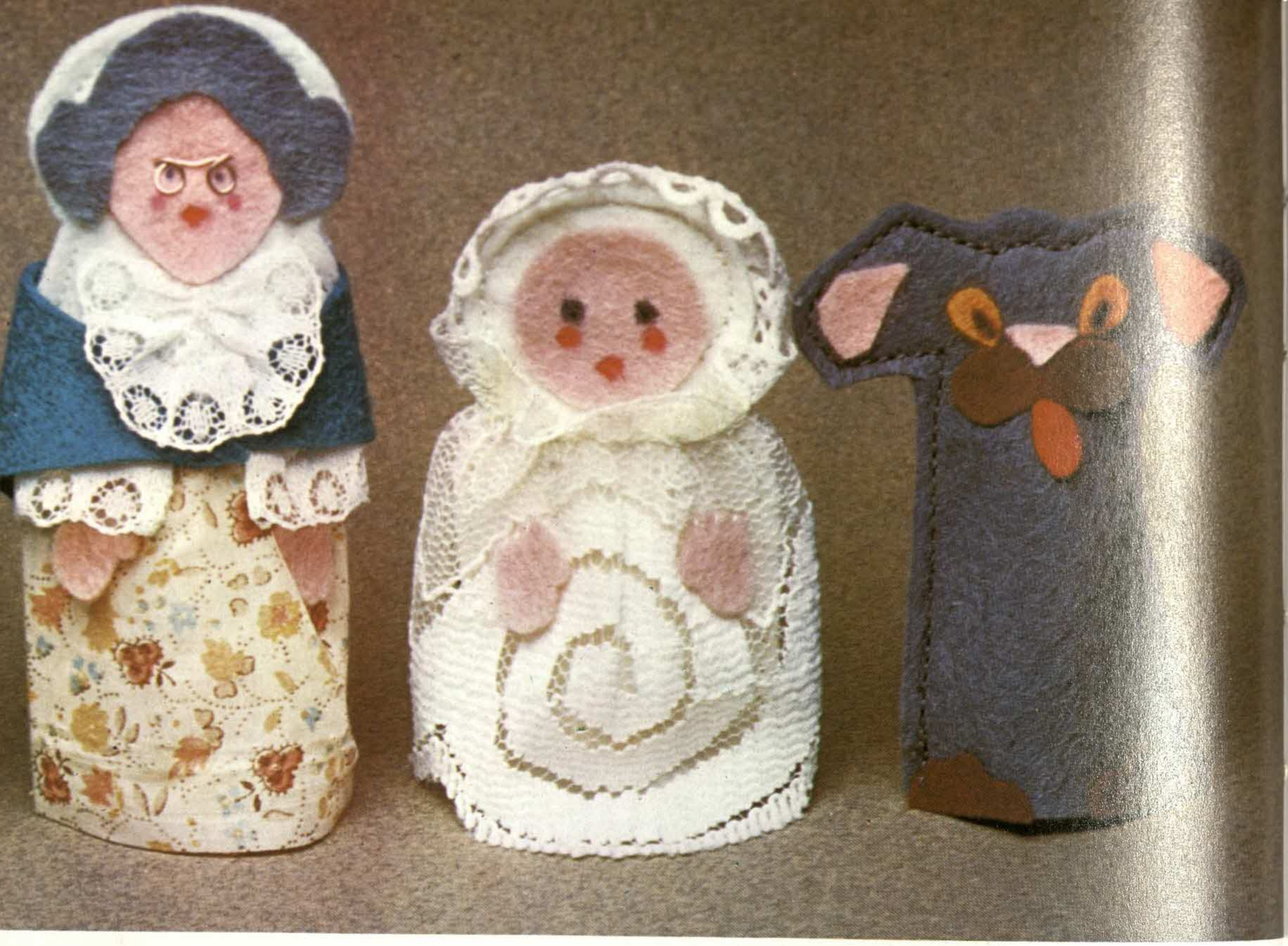
With the aid of this young puppeteer, mother and father come to life and take their pet dog for a walk.

Steve Bicknell

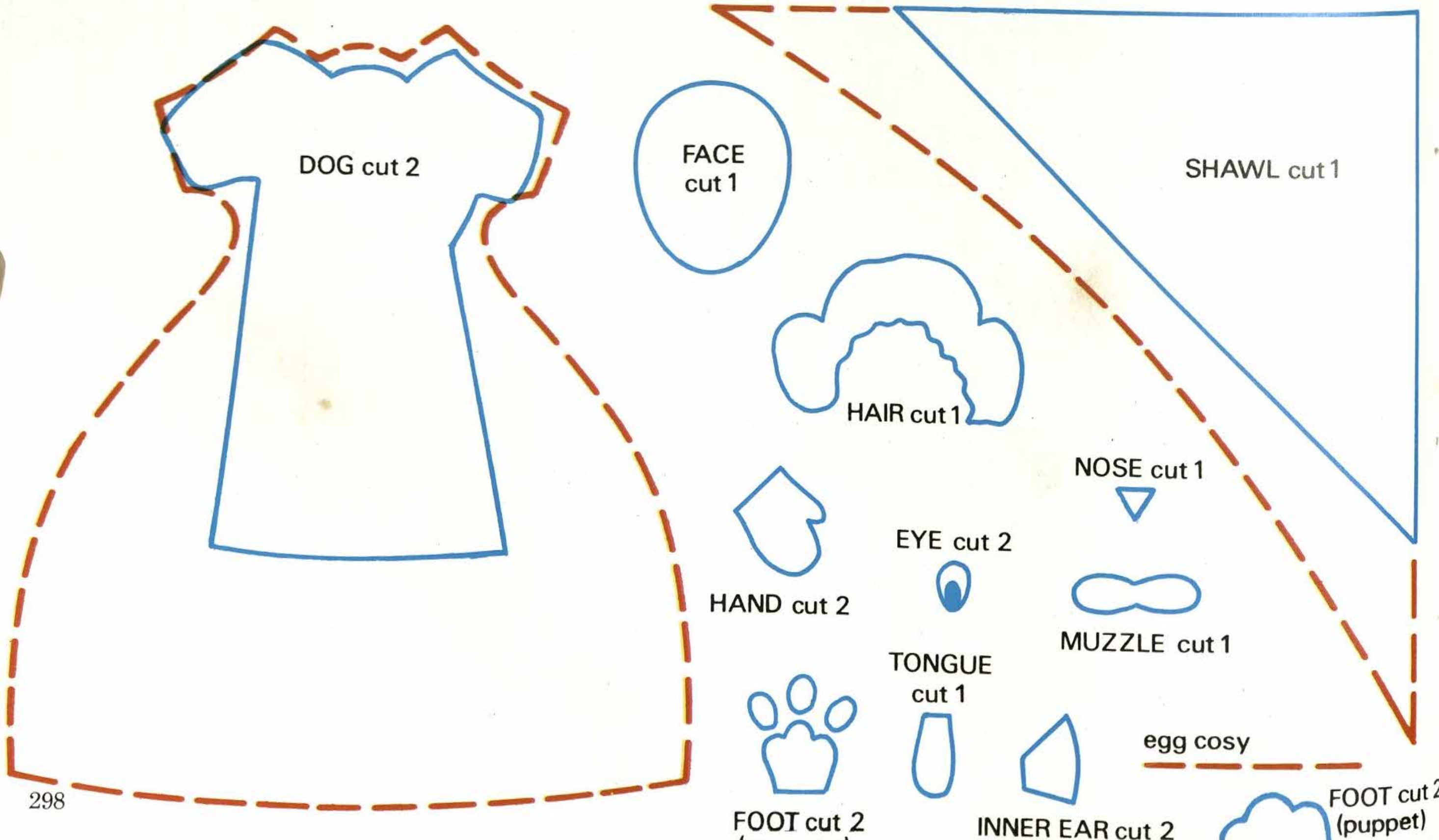
Below: trace pattern for basic body, face and hand, and for father and mother.



Paul Williams



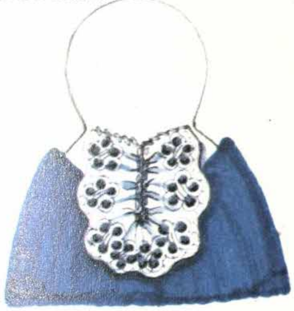
Below: trace pattern for dog and granny.



waistline. Stick straps to the shoulders.
☐ Stick spoon to one hand. Stitch wrist edges of hands to front of body at waist of skirt. Stick cuffs over the stitches on hands.
☐ Draw in features on face and stick to the head. Stick hair in place.

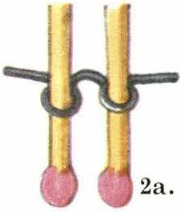
Granny

Trace off all pattern pieces for granny plus a body shape, face and hands. (See body pattern on previous page).
☐ Cut out two body shapes from white felt. From pink felt cut two hands and one face. Cut hair from grey felt.
☐ Stitch the body pieces together, leaving bottom end open.
☐ For skirt, cut a strip of fabric 6.5cm (2½″) deep and 11.5cm (4½″) wide. Make up and attach as for mother.
☐ Cut out the triangle for shawl from felt. Arrange shawl round granny's shoulders and, overlapping ends at front, catch stitch to front of body.
☐ For jabot, work a row of gathering along the straight edge of a 4cm (1½″) long strip of 1.5cm (½″) wide lace. Draw up gathers, fold and stitch to front of body in neck of shawl, as shown (fig.1). Turn in raw edges at top and stitch down.

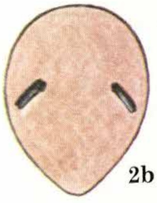


1. *Lace stitched in the neck of shawl.*

☐ For cuffs cut two pieces of the same lace 4.5cm (1¾″) long. Join the cut ends of one piece. Make up other cuff in the same way.
☐ Attach these to body front at waist beneath edge of shawl. Insert a hand into each cuff and stitch in position.
☐ Shape a piece of fuse wire around two match-sticks for glasses (fig.2a). Push the ends through the felt face and flatten at the back (fig.2b).
☐ Mark in the features and stick face to the head.
☐ Stick hair in place.



2a.



2b.

2a. *Shaping fuse wire around matches.*
2b. *Wire flattened at back of face.*

Paul Williams

Roger Phillips

The dog pattern here made up into an egg cosy using felt of a different colour.

Baby

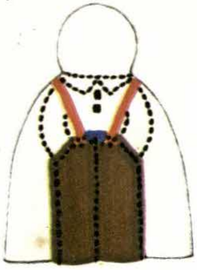
☐ Trace off pattern pieces for body shape, face and hands, rounding off face as in photograph (see body pattern on previous page).
☐ Cut out two body shapes from white felt. From pink felt cut out two hands and one face.
☐ Cut a 7.5cm (3″) strip of 1.5cm (½″) wide lace and gather along the plain edge. Pull up the gathers to fit round the head and tack on to wrong side of one body piece.
☐ Stitch the two body pieces together, enclosing the gathered edge of the lace and leaving the bottom edge open.
☐ Cut a 14cm (5½″) strip of 6.5cm (2½″) wide lace. Join the back seam. For neck edge, work a row of gathering 1.5cm (½″) from one edge and insert puppet. Pull up the gathering to fit round the neck and stitch dress to puppet on gathering line, taking care not to stitch the back and front of the puppet together.
☐ Draw in features on face and stick to head. Stitch wrist edge of hands to front of body through dress.

Dog

☐ Trace off pattern pieces for dog.
☐ Cut out two body shapes, two feet and all features from appropriate coloured felt.
☐ Stitch the two body shapes together, leaving the bottom end open.
☐ Draw pupil on to each eye. Stick feet and features on to front of body.

Matching egg cosies

It is easy to adapt these puppet designs to turn them into egg cosies. Use a 22cm (8½″) square of felt for each body. Use the alternative (red dotted) cutting line on the trace pattern for each body and for granny's shawl and make the following alterations when making up the various characters:
Father. Position the trouser piece centrally on to one body piece and stitch down outer edges of the trousers. When working the embroidery, outline the outer edge of arms (cutting line for puppet) as well as inner edge (fig.3).



Joy Simpson

3. *Trousers positioned on egg cosy.*

Baby. Cut a 24cm (9½″) strip of 9cm (3½″) wide lace for the dress.
Granny and mother. Cut the strips of fabric for each skirt 5cm (2″) deep and 24cm (9½″) long.
Mother. Work a line of back stitch to outline the outer edge of the arms, as for father, before assembling body. Complete each of the cosies as for the puppets.

Wire-wrapped jewelry

Metal 5

Stones are often collected simply because they look attractive or have an appealing colour. Often on a holiday you may find unusual stones on the beach and keep them as a souvenir. Instead of simply letting them collect dust use them to make a bracelet, necklace or ear-rings. Larger stones can be used to make pendants.

Select the stones you want to use for a necklace, for example, and arrange them in the sequence that you will link them together. The stones should be fairly similar in size and shape, or else the smaller stones should be towards the ends with the larger ones in the centre. The larger the stones the less you will need but don't make them too large as the weight will be uncomfortable to wear.

Sandra Lousada

Necklace and ear-rings made with pebbles found on a beach in Greece. Designed by Ian Manson.

To link the stones use wire that will hold them securely, ie the larger the stone, the thicker the wire should be. You can use any wire but try to find some that shows off the stones at their best. Rough stones do not need very fine wire but smaller, smoother stones look better in silver wire. You can use brass, copper, silver, silver-plated or even fuse wire.

Basically the method used here to assemble the jewelry is to wrap each stone in a wire 'cage' and then to link them with a series of jump rings. The wire does not have to be perfectly straight but it is easier to handle if it is. To straighten a piece of wire twist one end around a secure object and, using a pair of pliers, pull the other end until it feels as if the wire is stretching. This will remove most of the kinks from the wire.

To make the necklace

The method described here for making the necklace can also be used for a bracelet or ear-rings. The ear-rings will need findings from a jeweller to complete the assembly.

For an average-sized necklace the completed length should be about 56cm (22″).

You will need:

Jump rings, 1cm ($\frac{3}{8}$″) diameter, about 19.

A selection of stones or pebbles.

1.5mm (gauge 15) silver-plated wire.

Tools

Round-nosed pliers.

Side or diagonal wire cutters.

Metal file.

To wrap the stones. You will need about 15cm (6″) of wire to wrap around each stone, depending on its size. The wire should be longer rather than shorter as you can always cut off the excess but if it is too short the entire piece of wire will be wasted.

☐ Arrange the stones in the sequence you want to use them, leaving a gap of 2cm ($\frac{3}{4}$″) between each one.

☐ Using the round-nosed pliers make a loop at one end of the wire to hold the jump ring.

☐ Hold this to the stone in the position you want it. Bend the length of wire around the stone, working from the looped end and holding it tightly in position. Work towards the other end of the stone, bending the wire to follow the curves of the stone.

☐ Make a loop at the other end and cut off any excess wire.

Make sure that there are no sharp pieces of wire sticking out as they will catch on clothing or scratch the skin.

☐ Make the jump rings (you can use bought ones) and assemble the stones. Depending on the necklace length you require, use one jump ring between each stone, or three for a longer length, but always use an odd number otherwise the stones will not hang as planned. Make sure the front of the stone will face the correct way when assembled (see Metal 1, page 24).

To make the ends. Measure the length of the arranged stones and subtract this length from the length of the completed necklace. This will give you the length required for the two ends. Say it is 16cm (6″), then 8cm (3″) must be the length of each completed end.

☐ Add 4cm ($1\frac{1}{2}$″) to the end length and cut the wire. File any sharp ends.

☐ Make a large loop at one end of each piece using the round-nosed pliers. These will be attached to jump rings to assemble the necklace.

☐ At the other end make a U-shaped bend and turn the ends slightly away from the longer length. Shape the entire length so that the two pieces will hook into each other (fig.1).

Bracelet and ear-rings

Very little equipment is needed for this simple bracelet. You can use any tumbled stones you like but choose ones that are roughly the same size and shape, with blending colours.

You will need:

8.8mm (gauge 20-21) silver wire, 1.25m (4′).

5 silver jump rings, 6mm ($\frac{1}{4}$″) diameter. If you want to make your own jump rings use 1mm (gauge 18) wire.

Bolt ring clasp and findings for the ear-rings, available from craft stores or jewellers.

About 8 tumbled stones.

Tools

Round-nosed pliers.

Side or diagonal cutters.

The length of the bracelet. Measure the wrist with a tape measure and to this length add 5cm (2″) to allow for the bulk of the stones and for comfort. If this measurement is over 19cm ($7\frac{1}{2}$″) you will probably need 6 stones, if less, only 5. If there is any doubt lay the stones in a row, allowing 2cm ($\frac{3}{4}$″) between each one and 6mm ($\frac{1}{4}$″) to spare

Alasdair Ogilvie

Bracelet and ear-rings made with tumbled amethysts. Designed by Gill Dutfield.

at either end. This will give you the final length required.

To wrap the stones. For each stone cut 2 pieces of silver wire both 10cm (4″) long. Bend one piece in the middle (fig.2).

☐ Hold the straight ends in the fingers and the loop with the pliers. Twist round in a full circle to make the loop secure. Repeat with the other pieces of wire (fig.3).

☐ Lay two pieces side by side with the loops at opposite ends and take one straight end and twist it round the base of the loop nearest it (fig.4). Do the same with the other end. Take care that the wire lies flat and makes a neat twist. Snip off the end after 2 complete turns and press in the end.

☐ Do the same to the other ends, thus making a wire cage with a loop at either end. The wires of the cage should be pulled out to form an oval shape so that the tumbled stone will slip inside easily, allowing a small space at either end.

☐ Holding the stone inside the cage, grip the wire with the pliers and make a zig-zag shape that lies flat on the stone. This will take a little thought and practice so study the stone carefully so you can show off its shape to advantage.

This bending shortens the wires so that the twisted loops sit snugly at either end of the stone. A gentle half twist of the pliers will tighten them further.

☐ Repeat all this with each of the stones for the bracelet.

To join the stones together open a jump ring just enough to slide the loop of two stones through it, then press together firmly. Repeat with all the others.

☐ Attach the bolt ring clasp to one end to complete the bracelet.

As an alternative to the bolt ring clasp you can make a hook from a piece of wire. Double 4cm (1½″) of wire and press the fold as close together as possible. Cut the straight ends even. Using the pliers turn these ends into a loop which goes through the loop at the end of a stone. Bend the loop down to make a hook (fig.5).

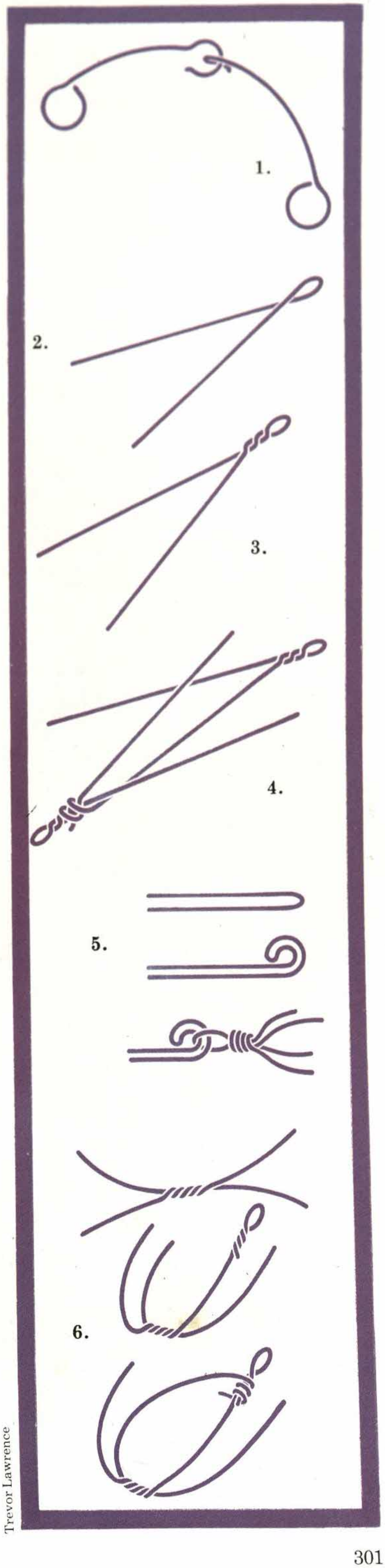
The ear-rings are made on the same principle as the bracelet, but the cages are made with a loop at one end only.

☐ Take 2 pieces of wire 9cm (3½″) long and twist them together with 3 turns in the middle.

☐ Bend all 4 ends upwards and with one end make a loop with the pliers, twisting the wire back on itself to secure. The end of this loop is laid down the wire and the other ends twisted neatly around it 3 times and then cut off and pressed down (fig.6).

☐ This makes the cage for the tumbled stone, so proceed to secure the stone as before. This time make sure that the twist at the bottom does not get pulled to one side when the wires are bent into shape.

☐ Connect the loops to the findings to complete the ear-rings.



Trevor Lawrence

Printing with potatoes

Colour — printing 4

Potato printing means, quite literally, using potatoes as printing blocks to stamp designs on to other surfaces. It is remarkably inexpensive and allows you a wide variety of designs that can be reproduced on paper, fabric, wood or even plastic.

Potatoes are an alternative to costly printing equipment and tools. Using only a kitchen knife you can cut motifs that can be stamped again and again. Moreover, designs do not have to be limited to the size of a potato since a larger design can be built up by repeating a single motif a number of times. Alternatively, a larger design can be made by using several different motifs together.

The low cost of materials make potato printing blocks suitable both for beginners and for people who want to experiment with designs. If one block doesn't work it is easy and cheap to make another one.

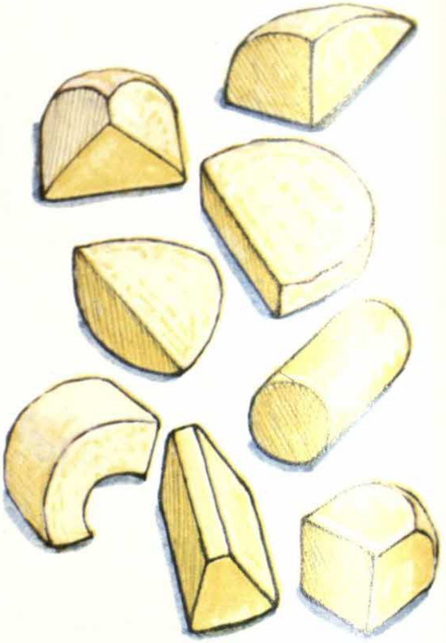
Making blocks

To make a printing block, wash, peel and cut a potato in half crosswise. Cut in a sawing motion to get a flat surface. This is the surface that will be used to print.

Cutting motifs

Motifs can be cut in several ways. So before you begin choose the one that best suits your design.

A motif can be incised into the potato by making V-shaped cuts with a knife and gouging out the motif. Linoleum or woodcutting tools can also be used. If you use this method the surface that will receive colour is the area *surrounding* the design—the design itself is recessed.



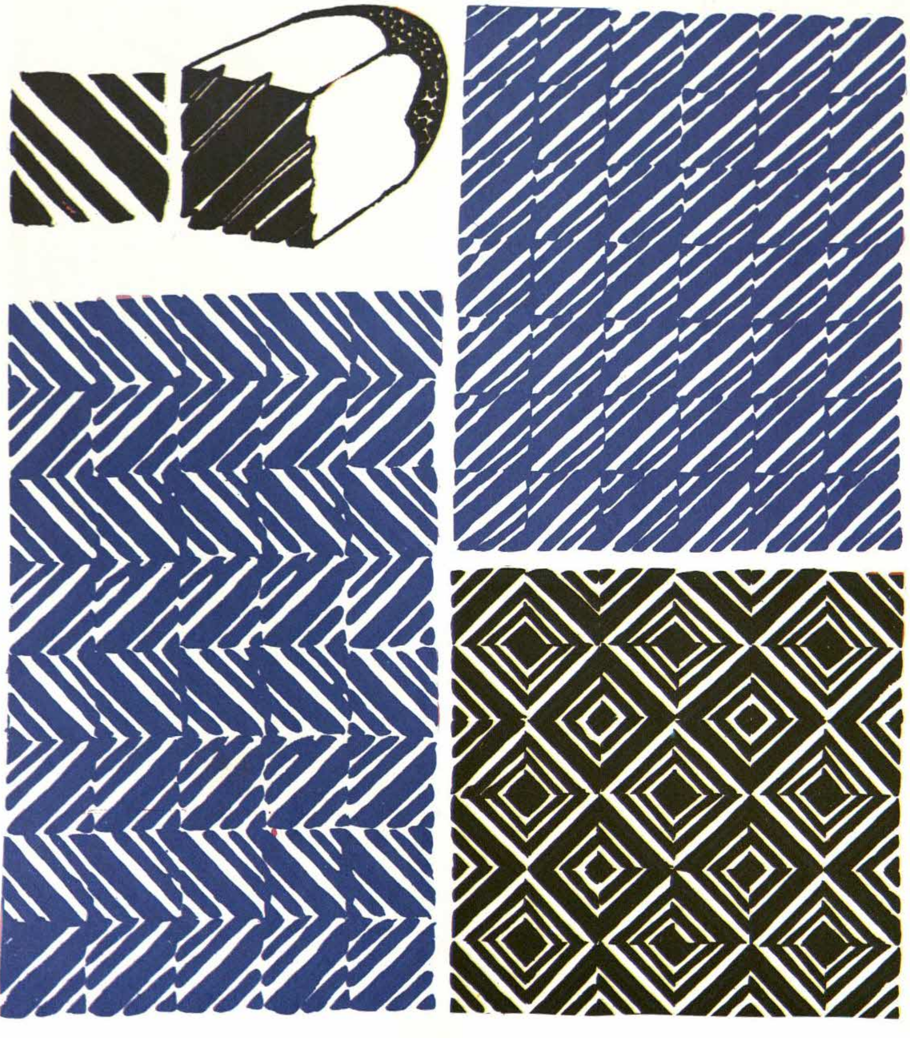
Joy Simpson

1. *Potatoes cut into geometric shapes.*

The reverse of this method is also possible. By carving out the area surrounding the design, the motif you want to print will be left in high relief to receive colour.

Most potatoes are roughly egg-shaped. When cut in half an approximate circle is revealed which can be used to print similar rounded shapes like apples and plums, the sun and the centres of large flowers.

But the technique that gives the greatest scope for printing with potatoes involves cutting the whole piece into a geometric shape as in fig. 1. This way you get a number of forms—lines, squares, dots, triangles—that can be used repeatedly to produce a single larger shape or abstract design. By cutting the whole piece you also get a sharper printing edge and can see the rest of the design on the surface while you are printing. It is also easier to identify different blocks.



Steve Bicknell

2. *These designs were made from one potato block (insert) printed in different directions. Top right: the block has been repeated several times in the same position. Far left: half the motifs are printed in as before and half are turned 90° to the left. The final design shows the block in four different angles.*

Opposite: potato printing gives a fresh simplicity to all sorts of objects as the stationery ideas show.

About paint

Any paint that mixes with water is suitable for potato printing. The potato itself contains water and, for this reason, oil-bound paints or printing inks cannot be used.

Watercolours, poster paints and tempera are all suitable for printing on paper and can be applied to the potato block with a brush or by using a piece of sponge as a stamping pad. To waterproof poster or watercolours on paper or card, spray with an artwork lacquer, obtainable at art shops.

Acrylic polymer paint is excellent for most surfaces, being naturally waterproof and hardwearing. It has to be applied with a brush as the paint dries too quickly to use the sponge method.

Fabric paste dyes are very satisfactory for printing on cloth, but bear in mind that these are dyes, not paints, and by printing one colour over another you will produce a third, since they will blend together. This method can be used successfully with a little foresight. Cold water dyes designed for use on natural fibres—cotton, wool, linen, silk—and on viscose rayon, should be used to get colour-fast results.

Apply the colour to the printing blocks with a paintbrush.

To print

Cover the surface of your printing block with colour and press it down firmly but gently on to the surface you wish to print.

If the motif is to be repeated, then recolour the block before you print again. This will ensure an even colour throughout. Alternatively, you can get variations in intensity by printing several times without recharging the block with colour.

As a general rule it is advisable to make a block for every colour you will need. Potatoes are fairly absorbent and the residue from the first colour may show through if another is used on the same block. If you are skillful however, you can use two separate colours side by side on one block.

Always cut new blocks each day as potatoes tend to lose their firmness.

To make table mats

The table mats shown are made with a combination of simple printing methods, but primarily using potatoes. They are made in linen but cotton fabric of a similar weight will do.

You will need:
Sheet of drawing paper.
Black fibre pen.
Linen or cotton for mats.
Old newspaper.
Potatoes.
Carrots.
Fabric paste dyes.

☐ Trace the basic outlines of the mats on to paper and enlarge them (see Design know-how 4, page 112). Sketch the outline with a black fibre pen.

☐ Put a magazine or pad of newspaper on your work table. Lay the outline on top of it and then put the linen mat over this. The heavy black outline can be seen through the linen and acts as a guide.

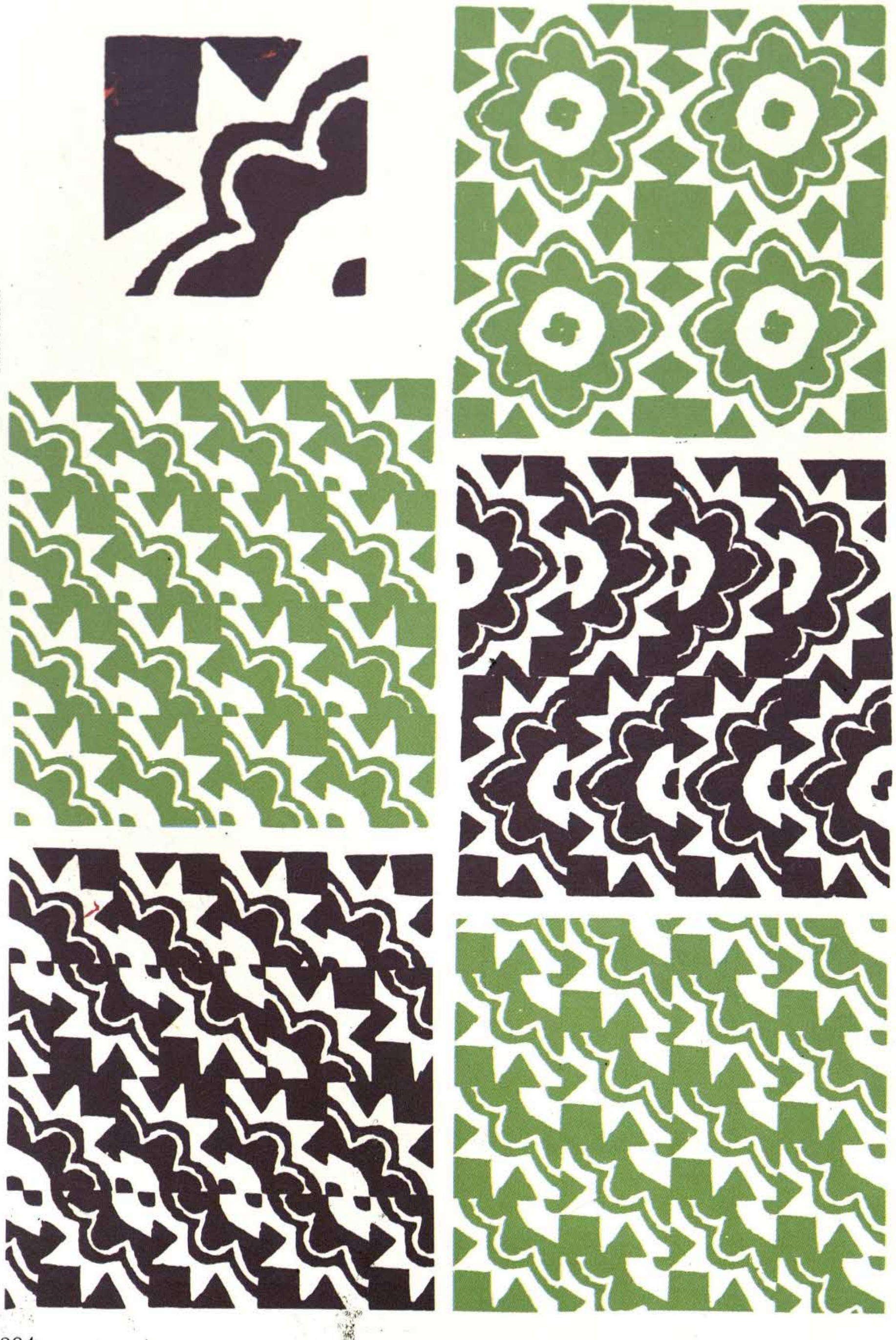
☐ To make the basket print rectangular and square shapes cut from potatoes and carrots.

☐ The peaches are simply potatoes cut in half and painted in two colours. The red and orange are merged slightly to get the special shading effects.

☐ To print the grapes use your finger to make finger prints.

☐ The leaves can be produced by painting in the leaf shape shown.

☐ When thoroughly dry, iron the mats according to the manufacturer's instructions to fix the dyes. Then work a line of stitching all around each mat and fray the fabric up to this line to make a fringe.



Janet Allen

3. *The designs on the left illustrate some of the great variety of patterns that can be produced from a single printing block. Like all designs in this chapter, they are by Janet Allen.*

Opposite: the vivid patterns on the mats are made from potatoes and carrots and from finger prints. The peaches are halves of potatoes, the grapes finger marks.

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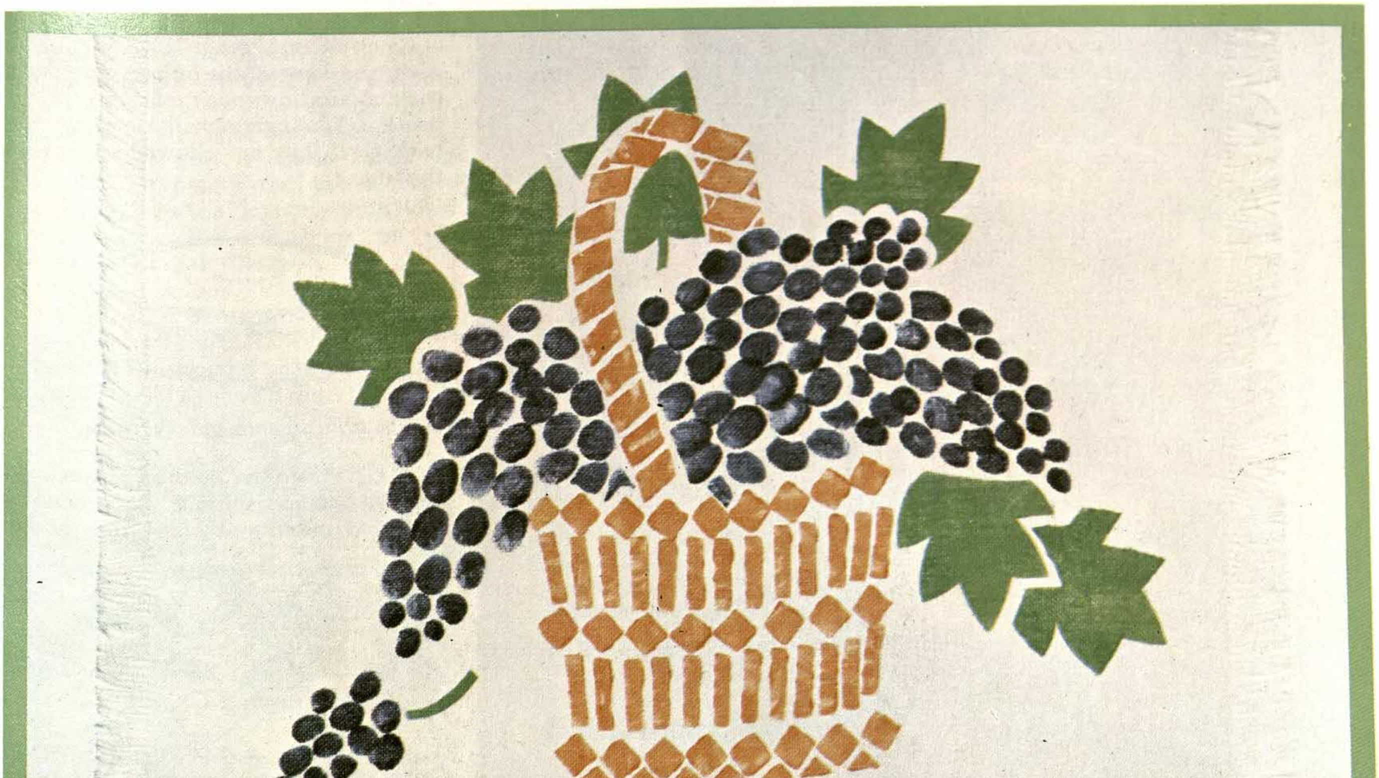
Steve Bicknell



Dick Miller

Bead embroidery on buttons

Beadwork 5

Making beaded buttons in delicate, flower-like patterns or to simulate flashing jewels was a favourite pursuit of Victorian ladies who found spare moments could be happily whiled away stitching these colourful embellishments for blouses, dresses and evening gowns.

But while a row of embroidered buttons could set off a hand-made Victorian gown they can do even more for a modern, mass-produced garment by transforming it instantly from the commonplace into something original. Opaque rocaille beads embroidered in one colour or in patterns—even miniature pictures if you are skillful enough—make distinctive additions to any garment, while transparent glass beads, beads with satin finishes and sequins give extra glitter to evening wear.

Bead embroidered buttons make novel jewelry too, mounted as ear-rings or cufflinks, sewn on velvet ribbon as a choker or stuck to a hairpin.

Bead embroidery methods

There are five methods of bead embroidery illustrated here. Each has a different effect, so think about which is the most suitable for your needs and which method you feel you would most enjoy working with. You can adapt the given patterns to your own designs and colour schemes.

Amber button

This button is surprisingly simple to make and if you prefer you can string up all the beads before you begin.

You will need:

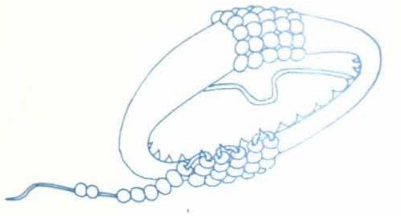
About 2000 satin-finished bugles.

3cm ($1\frac{1}{8}''$) metal button mould.

Beading needle and thread.

☐ Fasten your thread to one of the teeth on the serrated edge inside the button mould as shown (fig.1).

☐ Thread up a length of beads at least long enough to pass across the front of the button mould and take this length of beads across the centre to the other side of the mould. Hook the thread round the metal tooth opposite the starting point.



1. *Attaching beads to button mould.*

☐ Continue working from one side of the mould to the other as shown until it is covered. The raised area in the centre of the button results from the repeated overlapping during the circular movement.

☐ To complete, press the back of the mould in place. This type of button is comparatively fragile and should not be used anywhere where it will be subject to hard wear.

Crystal button

This button is worked on net.

You will need:

About 250 transparent glass beads.

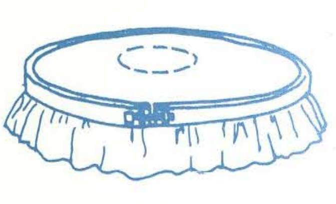
White net or tulle fabric.

Embroidery hoop.

3cm ($1\frac{1}{8}''$) white plastic button mould.

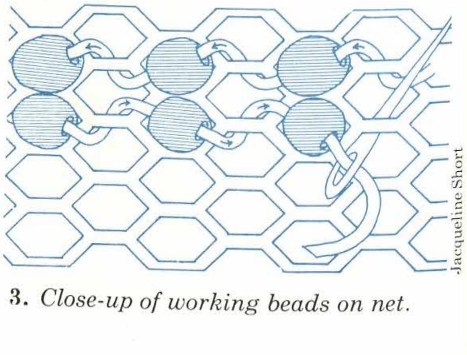
Beading needle and thread.

☐ Stretch the tulle or mesh fabric on an embroidery frame (fig.2) and mark out a circle on the net large enough to cover the dome of the button mould but without an allowance for folding underneath. (The beads will obstruct the backing if they are allowed to overlap the edge.)



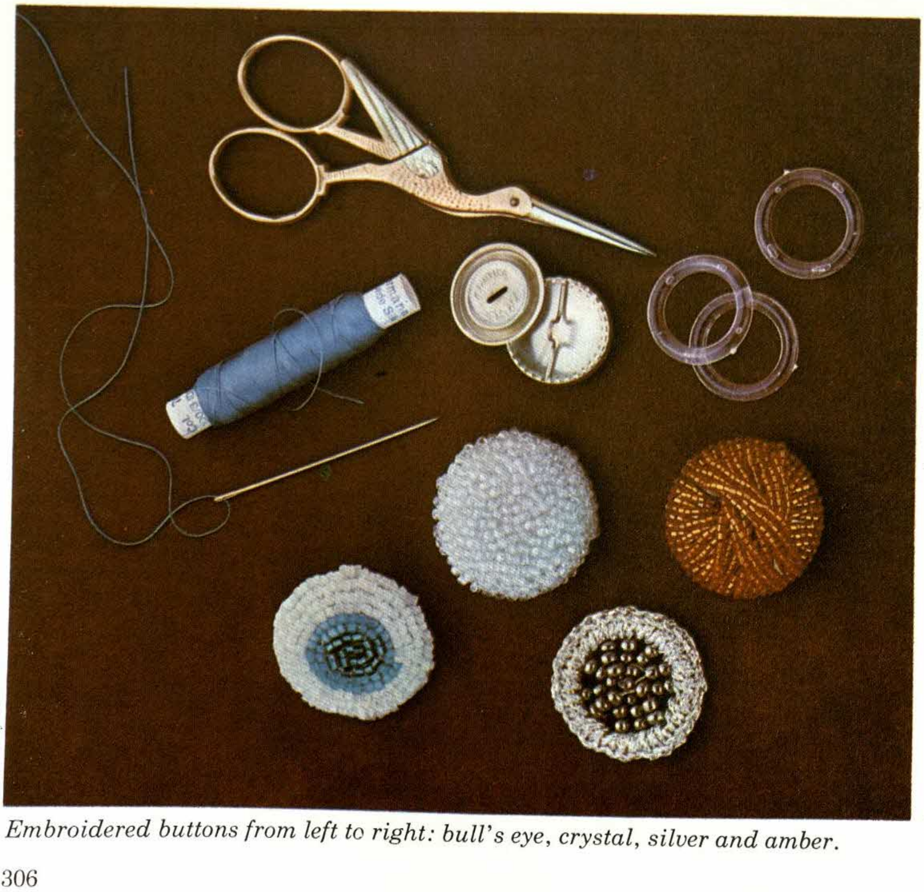
2. *The tulle on embroidery frame.*

☐ Fig.3 shows the method of working the beads on to the net. Each bead is threaded individually and the thread



Jacqueline Short

3. *Close-up of working beads on net.*



Johnnie Ryan

Embroidered buttons from left to right: bull's eye, crystal, silver and amber.

is wound round the mesh of the net between each bead.

☐ Depending on the size of your beads and the mesh of the fabric the method can be worked as illustrated or more closely, using up every hole in the mesh if beads are very fine.

☐ To complete the button, remove the net from the frame and trim a circle, leaving 6mm (¼″) of net around the beaded area.

Run a gathering thread round the edge of the circle and pull tight around the mould. Then slip the backing of the mould in position.

Bull's eye button

This button is embroidered by a method known as tambour work and while most beadwork of this kind is done on a specially made tambour frame, in the case of a small button an embroidery frame will do. Tambour work involves hooking beaded threads through a mesh and is used extensively to apply sequins.

You will need:

About 50 turquoise bugles and about 150 translucent bugles.
White net fabric.
Embroidery frame.
Tambour hook.
3cm (1⅛″) plastic button mould.
Beading needle and black thread.

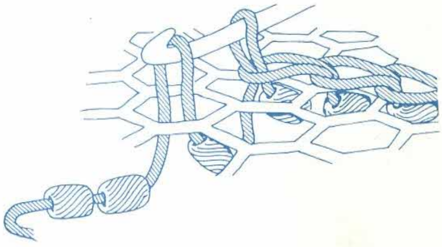
☐ Stretch a layer of net on the embroidery frame and draw a circle (fig.2).

☐ Tambour work is worked from the wrong side of the embroidery frame.

Using a length of thread and a beading needle, fasten the thread to the centre of the marked out circle and, working from the reverse side of the hoop, thread up a string of blue bugles.

☐ Hold the first of these beads up against the net. From the opposite side (top) pass the tambour hook down through the net and hook up the thread holding the beads.

☐ Draw up a loop, holding it in position with the hook. Position another bead against the net from below, reinsert the hook and pick up another loop of thread as shown (fig.4).



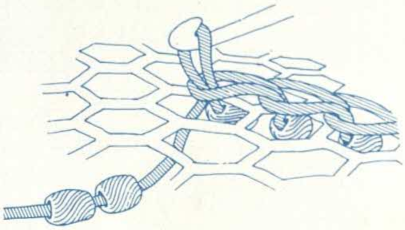
4. *Using tambour work method on net.*

☐ You should now have two loops on your hook. On the reverse side of the work each bead is held in position because the loops of thread are drawn up between each bead.

Tony Monssoulides

Beaded buttons make distinctive studs and cufflinks. By Jacqueline Short.

☐ Now pull the second loop through the first loop to form a chain (fig.5) and continue working the chain in this way. By proceeding in a sprial from the centre you will eventually fill out the circle.



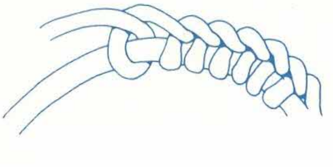
5. *Stage two of using tambour method.*

☐ The last loop of the chain should be secured by passing the beading thread back through the work, to the wrong side, and inserting it through the loop before casting off. Finish as for crystal button.

Silver button

You will need:

2.5cm (1″) diameter curtain ring.
Metallic silver knitting yarn.
About 30 gun-metal glass beads.
Beading needle and sewing thread.
Darning needle or crochet hook.



6. *Blanket stitch covers curtain ring.*

☐ Crochet round the curtain ring using the silver knitting yarn or work blanket stitch (fig.6).

☐ Thread a beading needle with sewing thread and fasten end of thread to inner edge of silver yarn. Thread enough beads to work across the ring and continue to work backwards and forwards across the ring.

☐ To prevent a raised area building up in the centre, try to use the centre beads more than once. For example, thread up three beads, pass through an existing bead, thread up three more and work into the yarn.

Fill the entire centre of the button and attach to garment by stitching at the centre.

Studs and cufflinks set

You will need:

Button moulds 11mm ($\frac{7}{16}$″).
Piece of felt or similar fabric.
Beads per button: 13 satin bugles; 12 white, 8 yellow, 4 blue rocaille.
Beading needle and thread.
Metal backing links.

☐ Cover the mould with the felt and snap the back of the mould in place.

☐ To sew the beads on to the felt in the pattern shown begin by working a band across the button with the bugles. Complete the 'cross' pattern with further bugles.

☐ Work white, yellow and blue rocaille according to the design.

☐ To make studs, slip metal loops through attachment rings on back of buttons.

Basic design principles

Design know-how 11

When you are working on craft projects it becomes less satisfying to keep repeating other people's ideas and you will probably want to produce your own designs. You can begin cautiously by altering an existing design a bit at a time—colours, materials or scale—or you can branch out enthusiastically on your own. After a while, however, it becomes important to understand the reasons for success or failure. The principles of good design are worth examining.

A good design has unity. This is the result of selecting certain shapes, rhythms, textures or colours which go together well and are satisfying to the eye. This also means eliminating other factors of the design which might confuse or which are not essential. Consequently the result is simple and effective.

The main visual elements are shape, line, tone, texture and colour; some or all of these are present in every design but one usually predominates. If you work with yarns you're probably interested in colour; working with wood or clay, texture and form are important. For collage—from making pictures with scraps of material to soldering pieces of metal—pattern-making will be the key. If you're making furniture it helps to understand proportion, especially in relation to the size and shape of the human body.

These various aspects of design will be looked at in future issues, starting with several chapters on colour—what it is and how you can use it. But to begin with you could find it very satisfying and useful in your craft work to try a few experiments. Here are a few simple things to do which will help you to come to grips with shape, line, tone and texture.

Shape

From a colour supplement or other magazine cut out darkish rectangles, varied in proportion and size, from thin strips to fat squares. Place them on a white piece of paper with edges parallel to the sides. Arrange them thoughtfully so that the spaces between them are interesting and similar in shape to the rectangles. This will mean grouping shapes and sticking some right up to the edges of the paper. Paste down. Repeat, seeing how simple a pattern you can make. This exercise can be varied with triangles, circles and other shapes—aim for simplicity.

Line

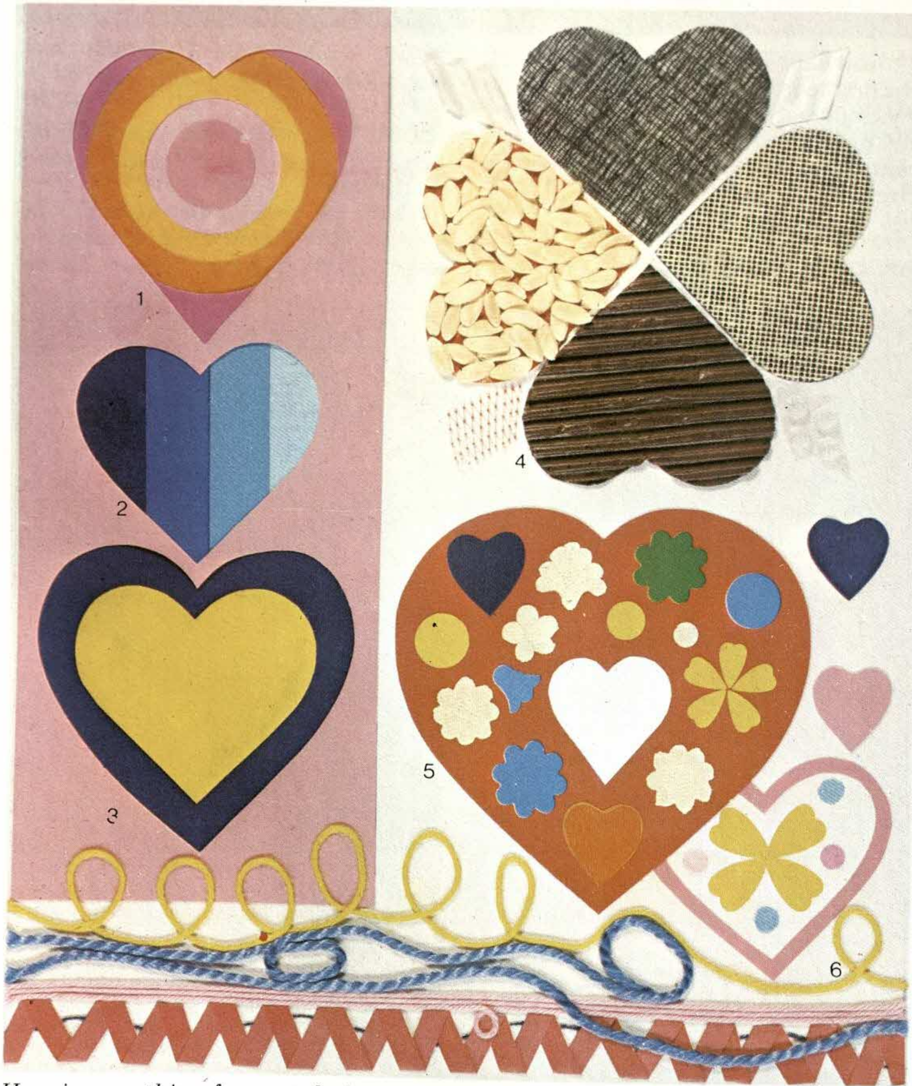
Take a small piece of card and some string of a contrasting colour. Cover the card with PVA glue. Stick a length of string near the middle, letting it take the shape that comes easily. Near it, but not necessarily touching, stick another length. Repeat, considering the widths and shapes between the pieces, to fill the card. Is a rhythm developing? Trim off the edges. Try again with another shape card and different string.

Tone

Tone is degrees of light and dark or light and shade. Try this experiment: tear up areas from a colour magazine of dark, light and grey. Paste them on a sheet of paper next to each other and overlapping so that you get gradations of colour or jumps from light to dark.

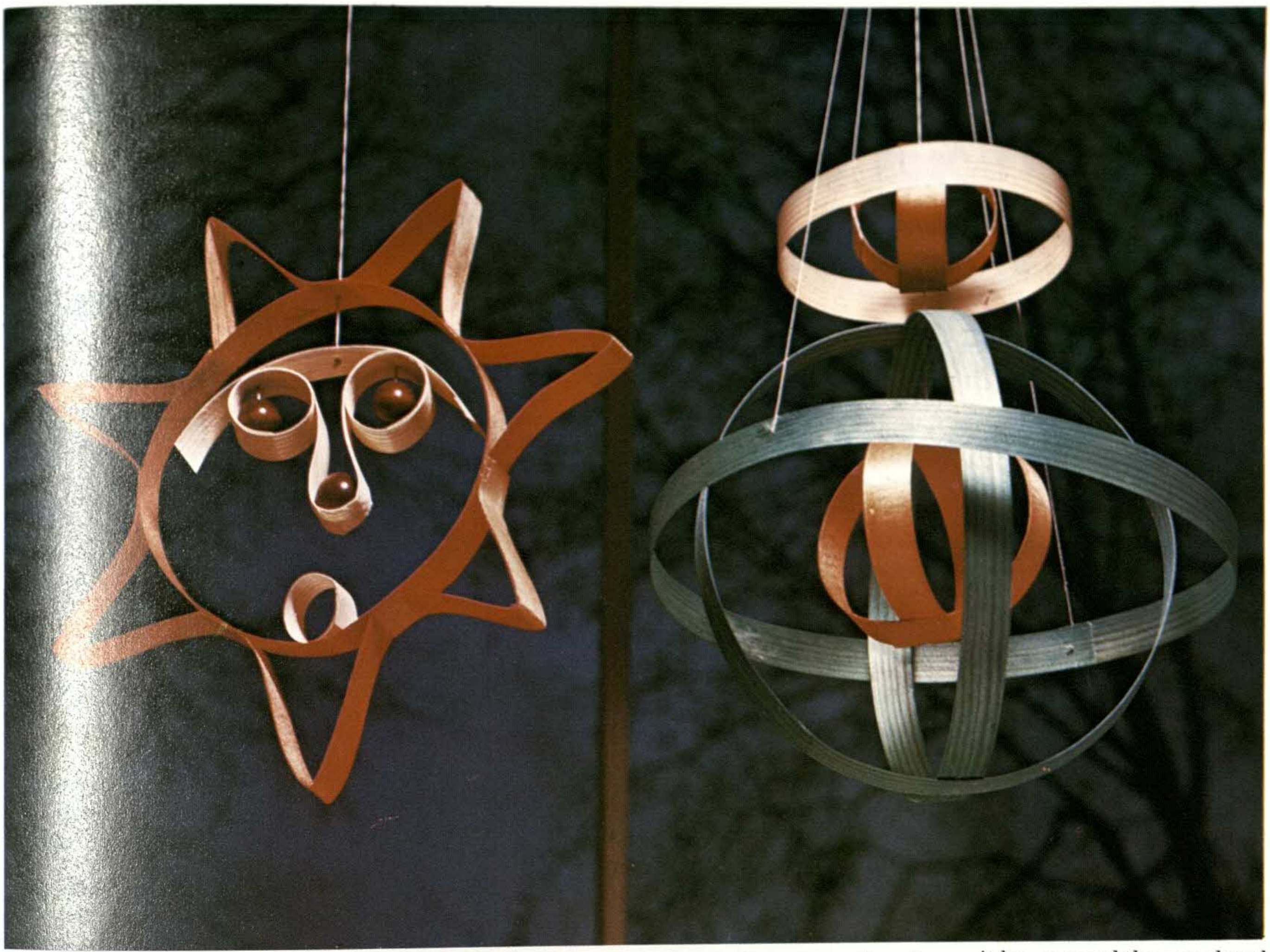
Texture

Texture is basically three-dimensional although some surfaces, for example wood, can appear textured through pattern alone. Collect textured patterns by doing rubbings. Place a piece of thin, firm paper over a bumpy surface like corduroy or a woven mat. Rub evenly with the side of a wax crayon; alternatively, rub with a candle and afterwards sponge over with ink. Cut into squares and build up a patchwork pattern.



Joy Simpson

Here is everything for your designs: 1. *Related colours:* 2. *Blue tones;* 3. *Complementary colours;* 4. *Texture;* 5. *Shapes, and* 6. *Line.*



Jerry Tubby

Creative ideas 11

Chipwood decorations

Chipwood is long wood-shavings, even in thickness and width. Chipwood comes in several widths which are sold in reels, sometimes coloured, but usually natural. When lengths are soaked in water they become very pliable and can be formed into shapes.

When you have decided on the particular decoration you are going to make, cut the lengths of chipwood as instructed and immerse them in a bowl of water for 25 minutes.

You can form the strips by hand or around a cup or rolling pin to get the right diameter circle you want.

Fasten the ends together with paper clips. When completely dry glue in position, then clip again till firm.

To make the two mobiles

You will need:

19mm ($\frac{3}{4}$") wide chipwood in red, green and natural.

Sewing needle.

Buttonhole thread or very strong embroidery silk.

3 brown beads for sun mobile, 2 x 15mm ($\frac{5}{8}$") diameter and one x 19mm ($\frac{3}{4}$") diameter.

4 matching small brown beads.

Paper clips, clear adhesive.

Sun mobile. Make one circle from a 46cm (18") piece of chipwood. Make seven 18cm (7") pieces into the points of the sun's rays by soaking in water and folding in half. Fold each end back to the outside and clip (fig.1). Glue around the circle as shown, overlapping the end folds, using paper clips to hold them.

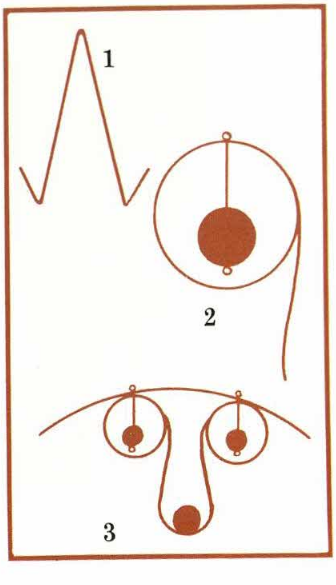
To make the face inside, soak and form a 30.5cm (12") strip into the eyes and nose, clip until dry then glue.

Cut a strip 15.5cm (6") long and bend over the top of the eyes and nose section for eyebrows. Glue and clip.

Suspend two beads, one in each eye, with thread using a small bead at each end of the thread as well as a knot (fig.2). Glue remaining bead in bottom of nose (fig.3).

With a length of strong thread which you can hang it by, suspend the completed face in the sun as shown.

Finally, make the mouth from an 8cm (3") strip formed into a circle and stuck below nose on circle.



World and Moon mobile

The Moon. Make the orbit circle from a 41cm (16") length of chipwood. Make the moon inside from two pieces 20.5cm (8") long formed into two circles and glued one inside the other.

The World. Make an orbit circle from an 84cm (33") length formed into a circle. Make the middle ball from two pieces 61cm (24") long. Make the ball inside this from two 30cm (12") lengths.

To suspend the mobile, first string the World and Moon together, working with the inner world globe, then the outer, and then the moon, tying knots along the thread to position each one.

Now suspend the orbits with equal lengths of thread, first the Moon's and then the World's.

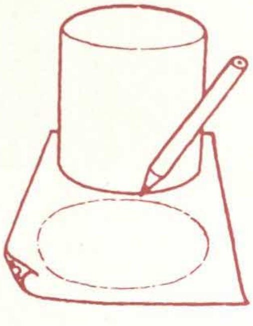
Round boxes and bows

Watching a girl wrap up chocolates in a Paris *confiserie* or sweet shop is a joy—deft fingers pleat the paper in a twinkling of an eye and there you are, carrying away a deliciously pretty package trimmed with gold cord or a butterfly-coloured pompon bow.

Wrapping round and oval boxes or tubes is an art in itself and can be a little daunting if you don't know how to go about it, but there are several attractive ways of tackling the problem.

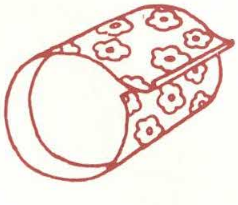
Round and oval boxes

Using wrapping paper. Trace the top and bottom of the box or cylinder and cut out two circles (fig.1).



1. *Cut out two round end pieces.*

Wrap the sides of the box, trimming the overlap so that it can be turned under slightly (fig.2). Secure with concealed tape.

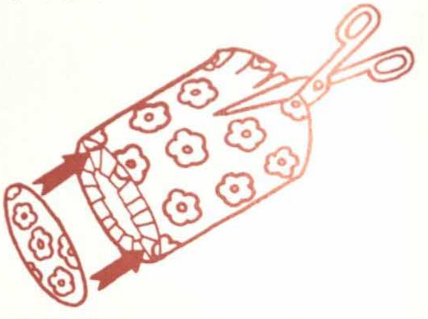


Kate Simunek

2. *Wrap up the sides of the box.*

Trim the ends so that the paper extends slightly over the top and the bottom of the box. Snip into the edges of the wrapping paper up to the edges of the box (fig.3). Secure with paste or tape.

Attach the circles to the top and bottom of the box with paste or concealed tape (fig.3).



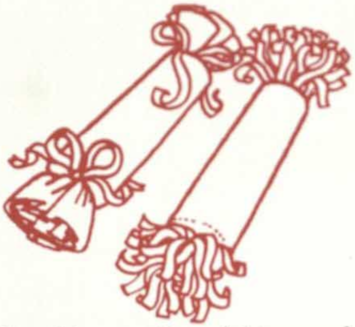
3. *Snip edges and attach end pieces.*

These pastel coloured round parcels demonstrate two different methods of wrapping—finishing with end circles and finishing with pleats.

With tissue paper follow the same method but cut the top and bottom circles out of card and cover these with tissue paper.
To do this, cut two slightly larger circles of tissue paper, snip into the edges of the paper up to the edges of the cardboard circles and turn the tissue paper under. Glue the circles to the top and bottom of the box. This prevents the glue showing through.

Cylinders and tubes

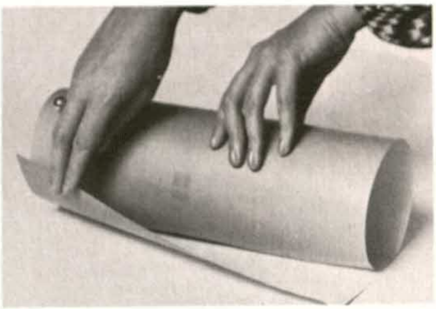
Wrap the paper around two or three times. Tie the ends like a cracker with Hallmark ribbon or tie and flare the ends of the completed gift wrap or fringe them (fig.4).



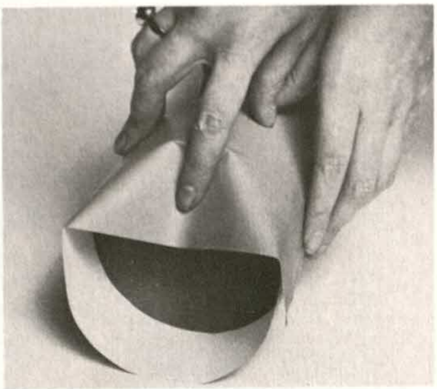
4. *Use ribbons or tie and fringe ends.*

Alasdair Ogilvie

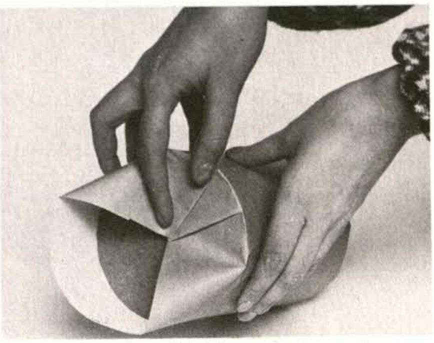
Pleated ends. Leave an overlap at both ends of the cylinder or tube, the length of which should be about the length of the radius of the circle. Fold pleats towards the centre of the circle and when the last fold is in place, seal the centre of the circle with a decorative seal or bow. The thinner the paper, the smaller the pleats can be and the more professional your parcel will look.



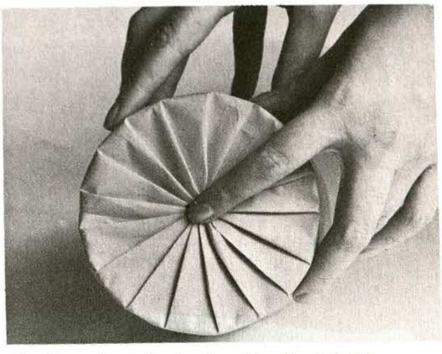
Leave an overlap at both ends of parcel.



Start folding overlap towards centre.



Turn parcel and fold again to centre.

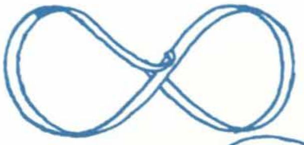


Seal centre of pleats after last fold.

Hallmark

Making decorative bows

Spaghetti bow. For a 12.5cm (5″) bow cut a 1cm ($\frac{3}{8}$″) wide piece of ribbon into 14 pieces each 40cm (16″) long. Make a figure '8' from each piece. Moisten or glue and secure at the centre (fig.1). Moisten or glue and attach one figure '8' crosswise at the centre of another (fig.2). Continue attaching figure '8's until bow is complete (fig.3).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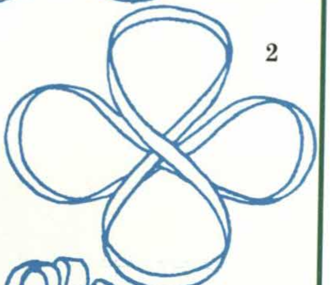
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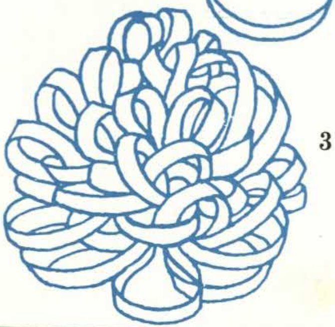
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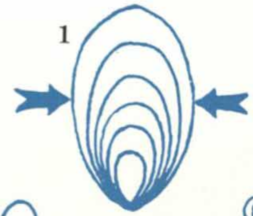
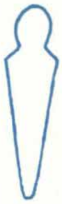
Butterfly bow. Pinch six ribbon circles into oval shapes (fig.1). Moisten and attach the six ovals at one end to form wings. Make up three others. Cut body from black ribbon (fig.2).

Cut a strip of ribbon approximately 15cm (6″) long for antennae. Fold in centre and form rings at both ends (fig.3). Attach wings and antennae to body of butterfly (fig.4).

1

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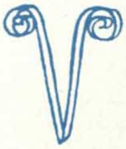
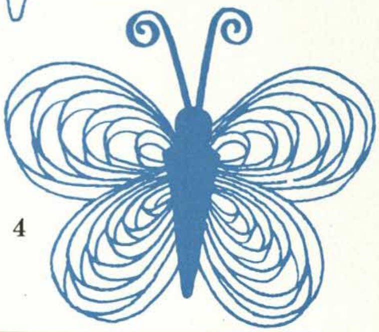
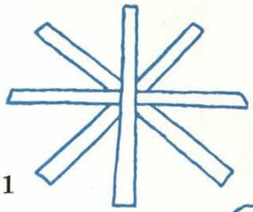



4

Swirl bow. Criss-cross four pieces of 28cm (11″) Hallmark ribbon and stick together (fig. 1). Join the ends of each piece of ribbon to form a ball shape (fig.2). Moisten the inside centre of the criss-cross. Twist the top a quarter turn and press firmly to the bottom (fig.3).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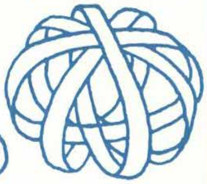
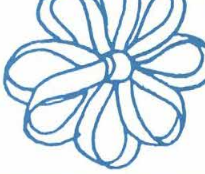
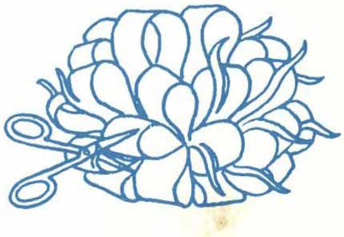



3

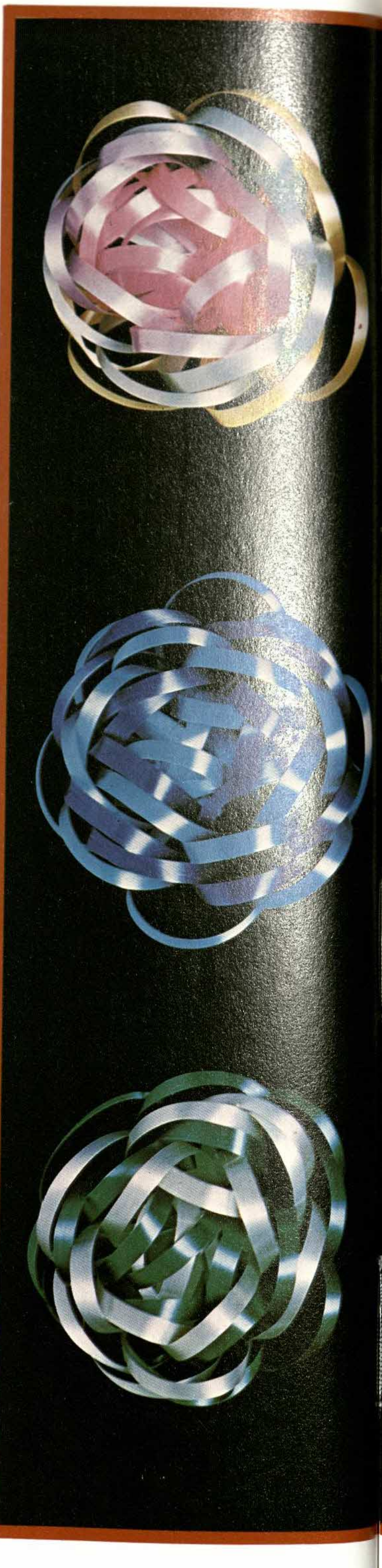
Sunburst bow. Make a knotless bow (see Paper chapter 9, page 282). With sharp scissors, snip two slashes (from opposite directions) into the outer edge of each loop.

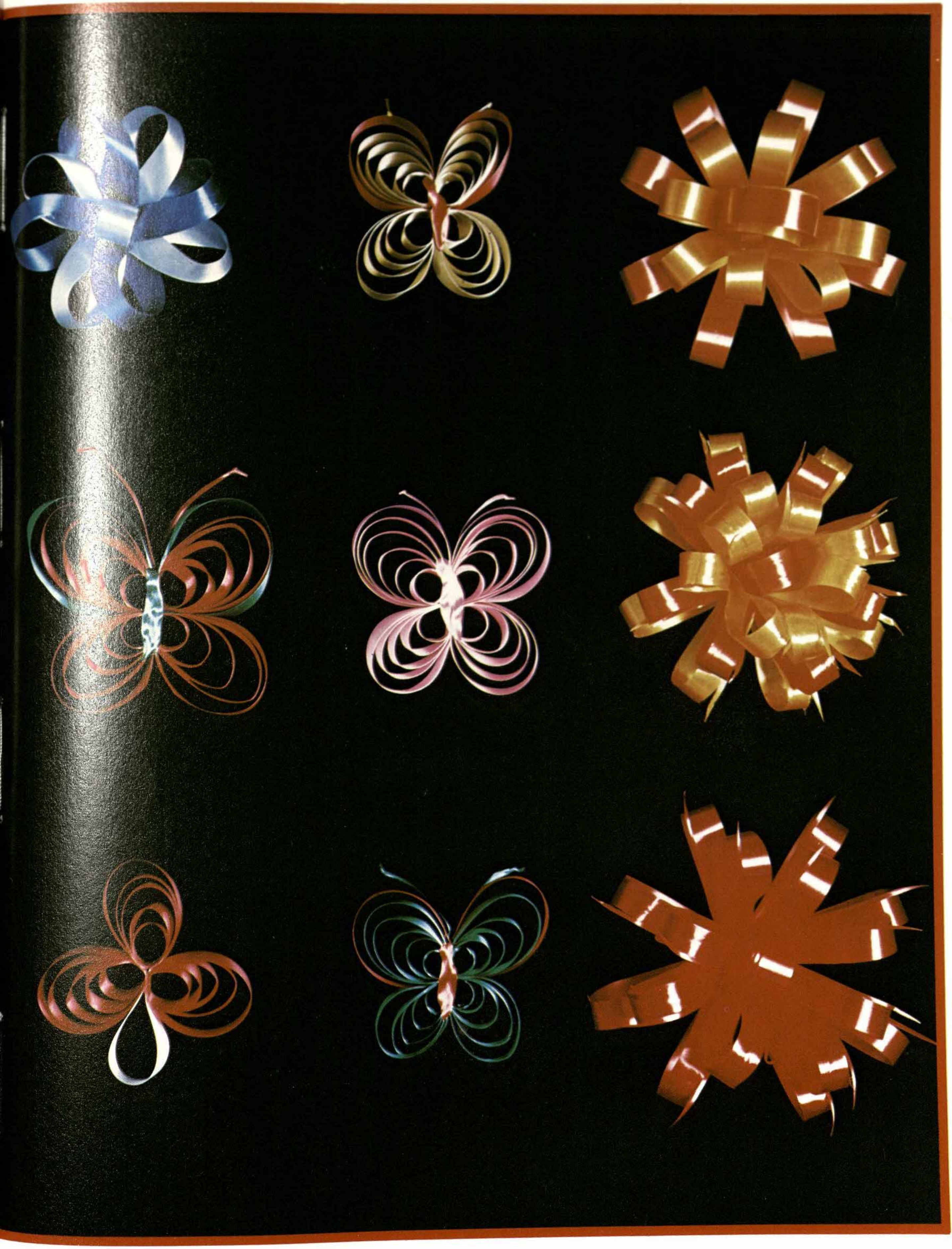


Kate Simunek

Right: decorations in Hallmark self-stick ribbons include, from left to right, (*first row*) *spaghetti bows,* (*second row*) *a swirl, a butterfly and a clover leaf variation on the butterfly bow,* (*third row*) *some colourful butterflies and* (*fourth row*) *a swirl with a simple loop at the centre followed by two sunburst bows.*

Keith Morris





How to develop cold enamelling

Once you have mastered the basic technique of applying cold enamel, you can go on to use the unique properties of cold enamelling to the full. The two principle advantages that this process has over traditional enamelling are its ease of application and the fact that it can be applied to almost any surface. If you exploit these attributes to the full, you will find that the scope for using cold enamel is very wide indeed.

For general information and safety hints on working with resins, see Plastics chapter 1, page 32.

Covering large surfaces

Cold enamel need not be confined to jewelry and can easily be used over a larger area. You can use it to turn cigar boxes or cheap, plain wooden boxes into highly decorative jewelry or cigarette boxes. Opaque colours are usually best for this sort of work, as they camouflage any defects or scratches—particularly if you are covering an old surface.

When decorating a box, you may only want to cover the top; in which case tape around the edge of the top as described in the previous chapter, and pour the liquid plastic on to the surface. If you intend to cover the whole box, you will have to do this one side at a time. Keep the side which you are decorating flat.

Old pieces of unattractive wood, or chipboard and plywood off-cuts, can often be put to use when decorated with cold enamel. You could turn a flat piece of wood into a tray or a pot stand for the kitchen—however it wouldn't be suitable for hot casseroles. Or you could take an old tray and re-cover that.

Be careful not to get carried away with using too many colours just because you have a substantial area to work on. It is almost always more effective to stick to two or three colours to make a design, unless you are confident about your ability to handle complicated, multi-coloured designs without letting them turn into a muddle.

Translucent cold enamels

Some cold enamel colours are translucent and look very effective used with metal foil as a base. Any foil will do, either smooth or crushed—the crushed type gives interestingly irregular reflections and a sparkling effect.

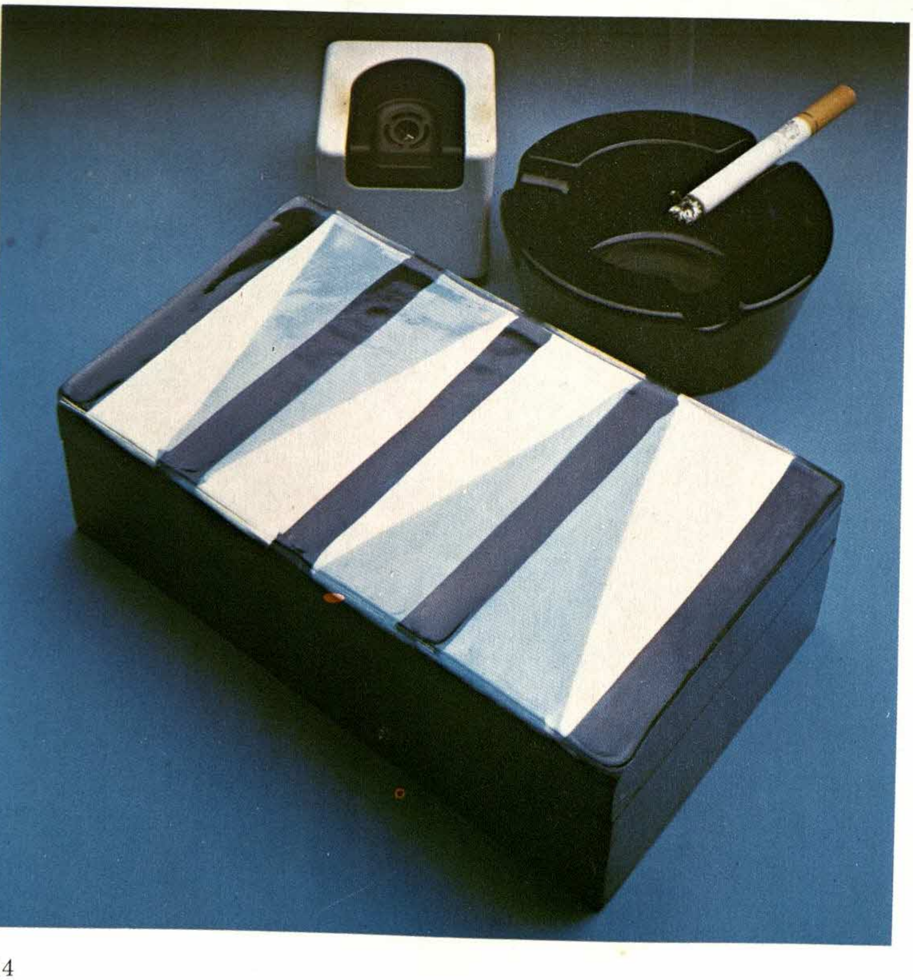
The foil itself must be attached to some sort of a base, such as a simple blank to be used for a brooch or pendant, or a larger flat surface, or it can even be wrapped round the lid of a box. Cut the foil to shape and then use a very thin coat of uncoloured cold enamel to stick the foil to the base. Then apply the top coat, using translucent pigments.

For small areas you will find that a single overall colour looks best; the sparkling light, reflected irregularly by the foil, gives all the pattern you need.

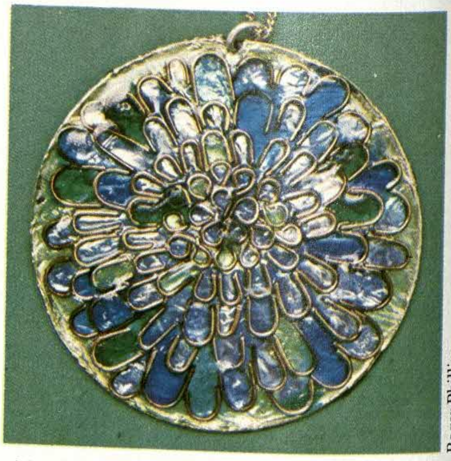
Embedding

Small objects like shells, coins, badges and photographs can be embedded into cold enamel. Either place them carefully on top of the semi-set plastic, so they are attached to it but stand out in relief; or add a coat of plastic, coloured with translucent pigment, to cover the objects.

You can use this method to turn any suitable object into a pendant without drilling holes or using any fittings. Simply embed both ends of a chain in the semi-set plastic that you are using to decorate the pendant.



Alasdair Ogilvie



Roger Phillips

Above: silver-plated wire forms the outlines for the various colours.

Left: each section is created with masking tape, using one colour and allowing it to dry, before doing the next.

Cloisonné work

One of the oldest effects used in traditional enamelling is achieved with the cloisonné technique. For this, thin wire is laid over the surface to be enamelled to form a pattern making different 'compartments'. Different colours are then used in the compartments, separated by the wire, and fired to the surface. This technique can easily be adapted for use with cold enamelling.

Bend thin metal wire into the shape of the design you want, such as a butterfly or a flower. Use a thin coat of clear plastic to stick the wire to a backing surface. When this has set, paint coloured cold enamel into each compartment.

'Stained glass' effects. Alternatively, on larger pieces you can use leather thonging or cord instead of wire.

This idea can be extended to make panels which will have an effect similar to stained glass.

Make a full-size tracing of your design and place it beneath a sheet of glass the same size as the pattern. Using a heavy black cord or leather thong to simulate the leading, lay it out according to your design and glue it in position with some resin. Make sure that each compartment is self-contained and will not let resin escape to mix with a different colour. Then use translucent colours to fill each compartment.

Hardening

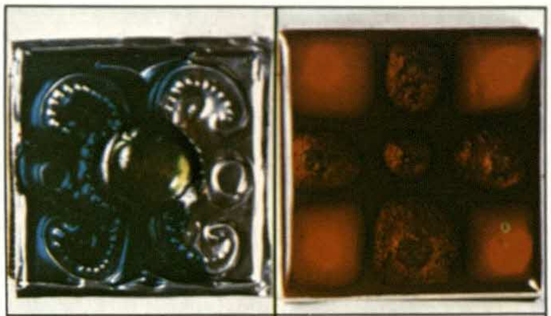
The resin is normally sufficiently set to handle carefully within 24 hours, and continues to harden for several days. When fully hardened it is extremely durable.

Do not try to speed up the curing process by adding more hardener than is recommended or by using direct heat. Once the resin is set it can be placed in an airing cupboard or near a radiator to complete the cure.

If the resin does not harden, or if it takes a long time, it may be due to too much colour pigment or too little hardener. The resin will set eventually and patience and a warm place are all that are required.

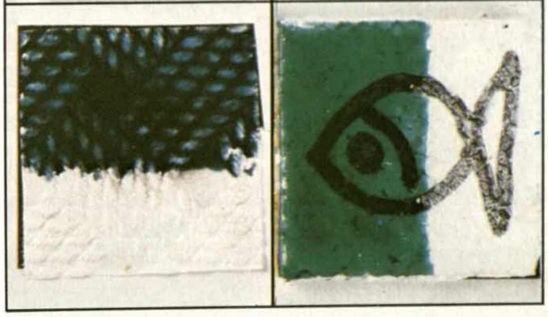
Curved surfaces

It is difficult to control the design on curved surfaces as the cold enamel will run. You can let the resin begin to thicken and then drip it at random on to the surface—the results can be most attractive. Another way of covering a curved surface is to block off small sections using masking tape and then fill each section, letting it cure before doing the next section, until the entire surface is covered. It is a slow process but the effort and patience are worth while. You can decorate old bottles in this way to make vases or to use as candle holders.



Far left: this design was created with a pointed tool on heavy-duty tin foil. The tin foil can be mounted on to a tile or a piece of card.
Left: this design was created on a ceramic tile by working in stages to achieve the varying colour tones.

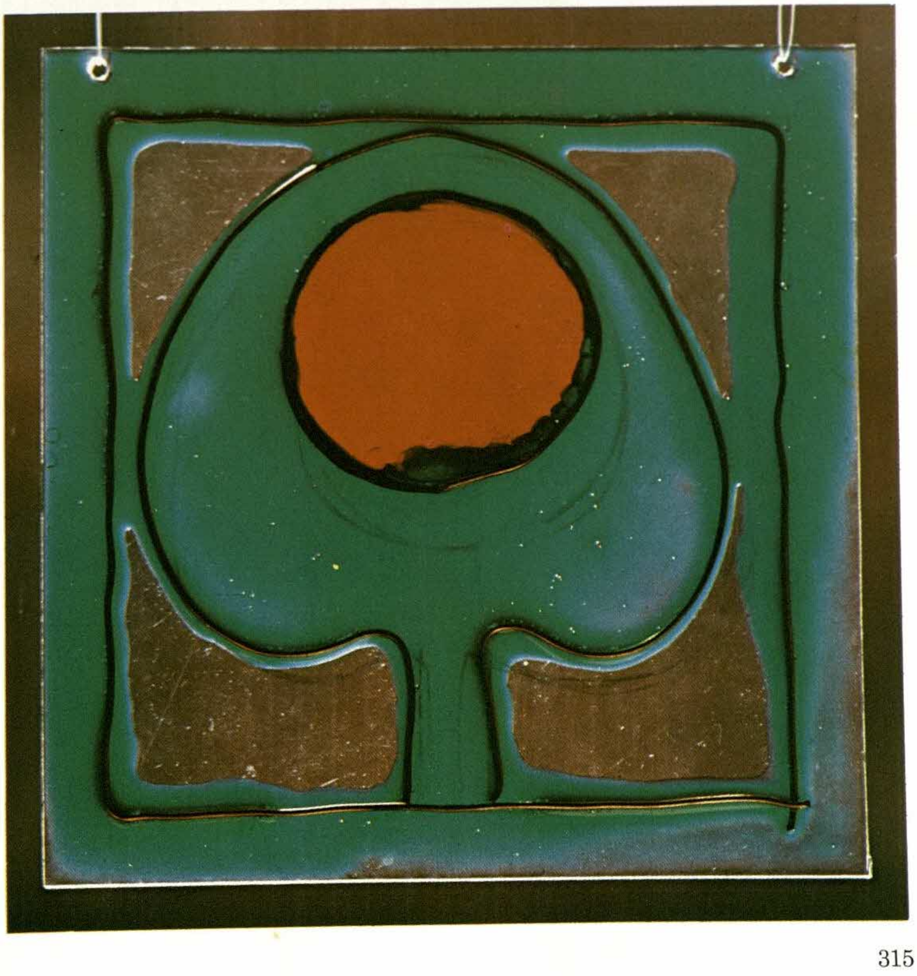
Far left: copper wire is placed on a wood off-cut before the surface is covered with plastic.
Left: the transparent butterfly is made using masking tape on tin foil which are removed when the shape is dry.



Far left: embossed wallpaper can be mounted on a tile or a piece of card and then enamelled.
Left: colour pigments can be used to create a design before covering a surface with tinted plastic.

Camera Press

Below: wire is bent for the outline of the design.



Camera Press

Detached chain stitch

The previous embroidery chapter used continuous lines of chain stitch but the stitches can also be used individually and arranged to form flower or leaf shapes. They are then known as daisy or detached chain stitch. The stitches may be worked in any size you require, but remember, if the stitches are very long they will catch easily and so are not suitable for working on articles that are used every day.

Cotton mesh

This is an embroidery fabric woven in blocks of cotton strands separated by holes through which the needle is drawn. The number of holes per centimetre (inch) vary: 6 holes per 2.5cm (6 holes per inch) have been used here and embroidery on this scale grows quickly. Penelope Binca and Panama cotton mesh are examples of this type of embroidery fabric. Cotton mesh is also available in smaller sizes for finer work. This fabric may be used for making cushions, table linen, chairbacks or stool tops.

After care. Wash in warm water and pure soap. Squeeze the fabric gently in the soapy water. Rinse thoroughly in warm water and squeeze gently by hand to remove excess water. Leave the fabric on a towel, lying flat, until it is half-dry. Press on the wrong side, using a moderately hot iron, working from the centre outwards until the fabric is completely dry. Alternatively the fabric may be dry cleaned.

Daisy stitch cushion

The flowers are meant to be worked in a random fashion, so embroider the largest flowers first, spacing them out, and then fill in the spaces in between with the smaller flowers. In the remaining spaces work the tiny four-petalled flowers and either bunches of, or single, leaves.

You will need:

35cm (14″) square of cotton mesh, 6 holes per 2.5cm (1″).

11 skeins of embroidery wool in 11 different colours.

Tapestry needle No.18.

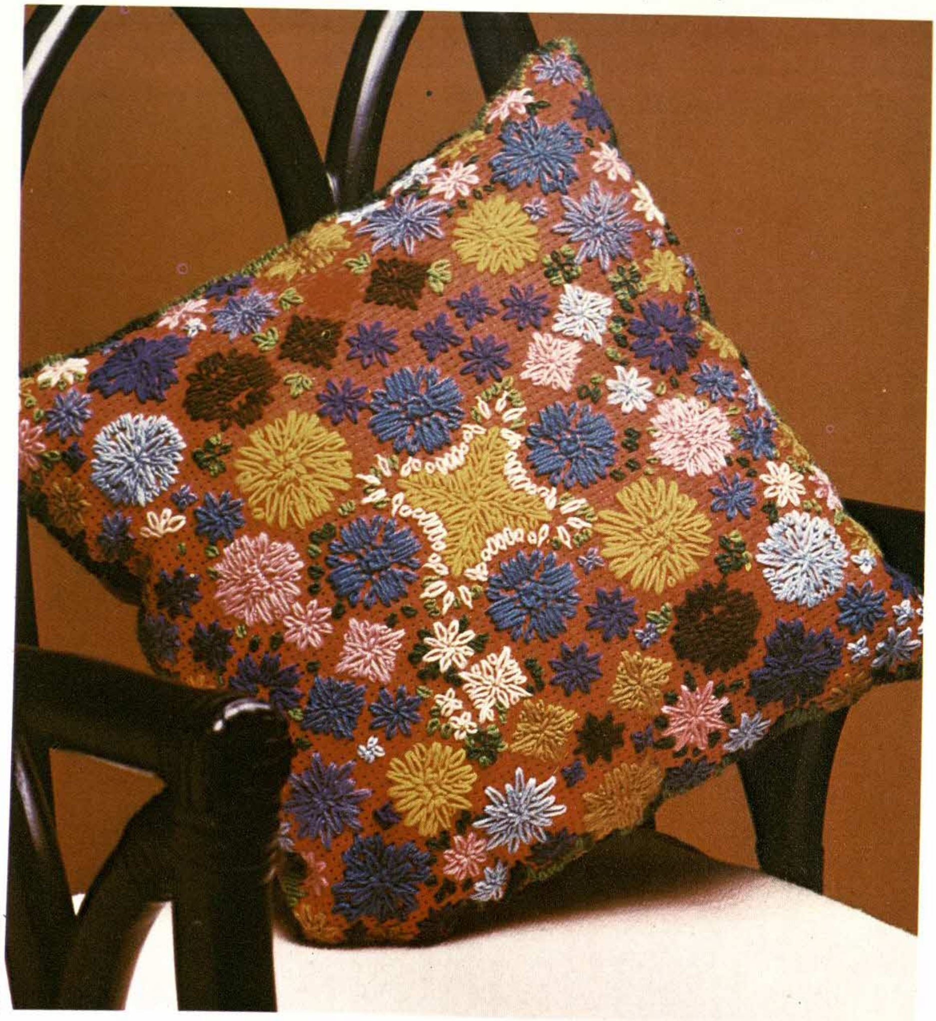
Material for back of cushion cover, 35cm (14″) square.

Cushion pad, 32cm (13″) square.

☐ Work the required number of flowers over the fabric leaving a 2.5cm (1″) border unworked. To give the edge of the cushion definition work a border of leaves 2.5cm (1″) in from the edge. Vary the height of the leaves so that they frame the flowers.

Note. While working with the wool it is important to twist it to the right to keep the ply tightly twisted. This gives a clean line to the shapes. Work the larger flowers one at a time.

☐ Leave the ends on the wrong side and tie them in a double knot to secure.

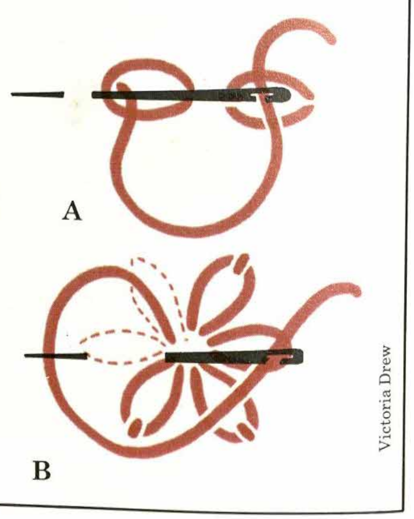


Steve Bicknell

This colourful cushion displays a random pattern of flowers in detached chain stitch. Fabric: Penelope Binca.

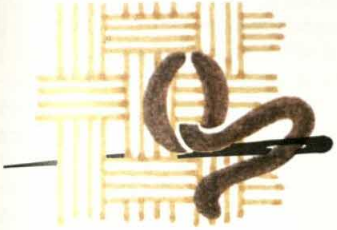
Basic stitches

Detached chain or daisy stitch. Make a chain stitch and instead of re-inserting the needle inside the loop, make a tiny stitch over the loop to hold loop in place (A). Leave a space and bring the needle out again to begin the next stitch. Work daisy stitches in the same way as for detached chain but position the stitches to form a flower shape (B).



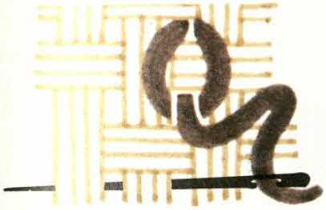
Victoria Drew

The detached chain stitches are held in place in two ways; either by bringing the yarn over the loop through the same hole (fig.1) or by bringing the yarn



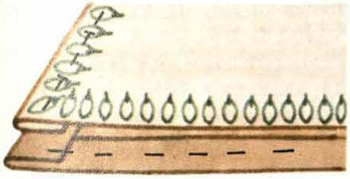
1. *Compact detached chain stitch.*

over the loop, over one block and through the next hole (fig.2).



2. *Detached chain stitch with a stem.*

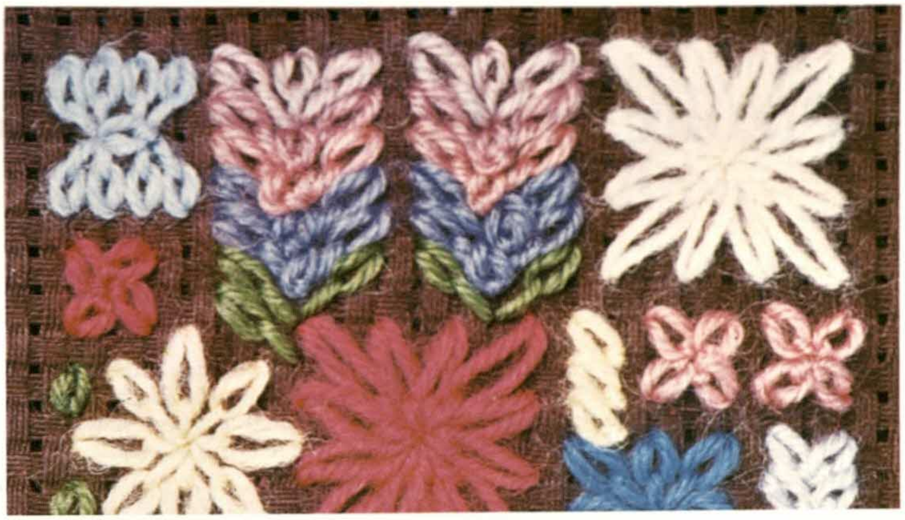
To make up. Fold the edges of the fabric to the wrong side so that the border of leaves is right on the edge, and pin. Fold the back of the cover to the same size and shape and pin the edges to secure them. Pin the back and front together, wrong sides facing (fig.3). Slip stitch around three edges,

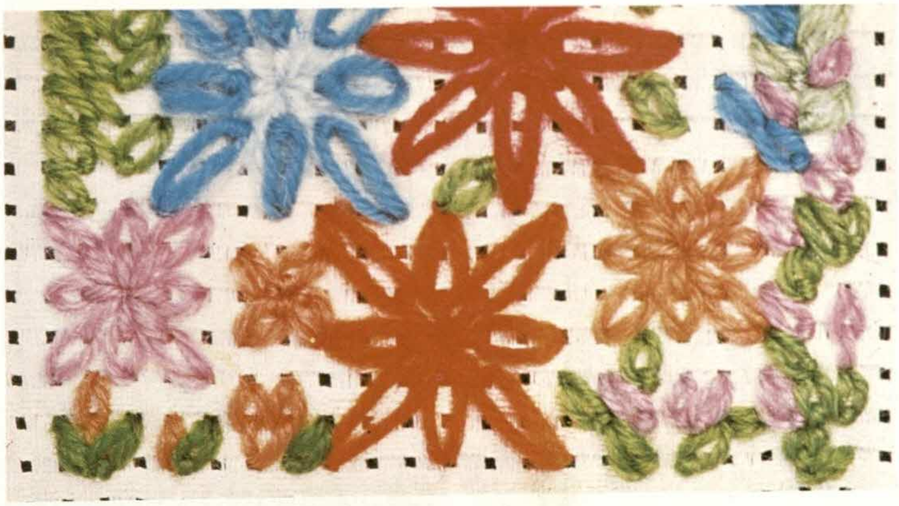


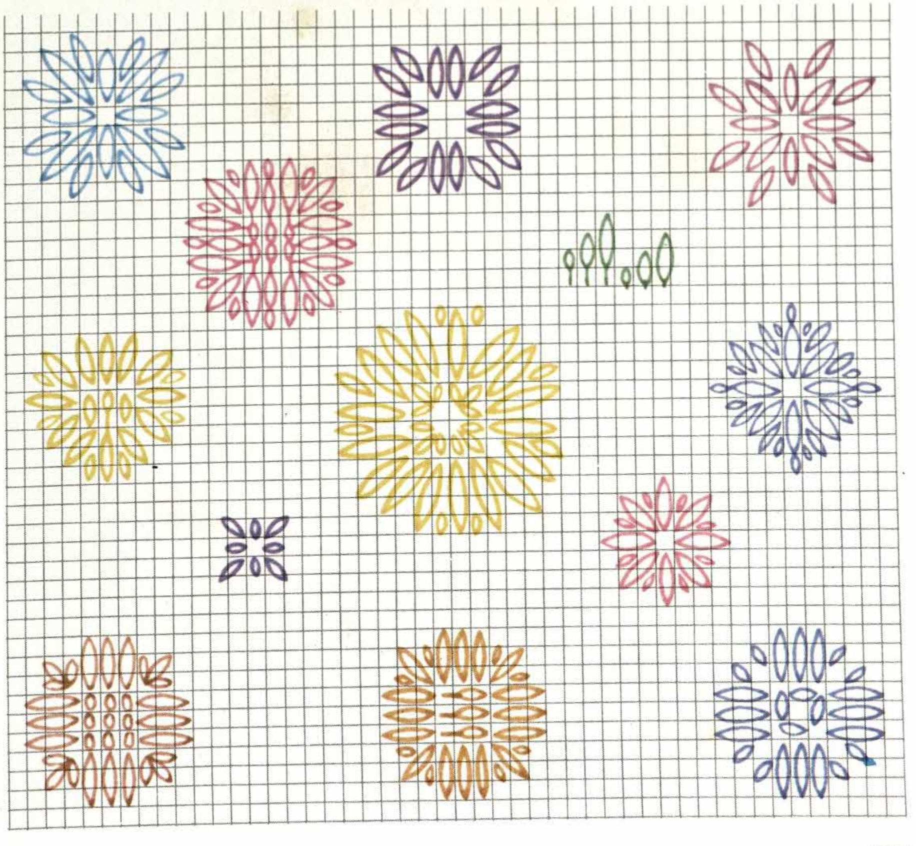
3. *Pin with wrong sides together.*

insert the cushion pad and slip stitch along the fourth side. The cushion is now complete.

The motifs show the variety of shapes that can be worked over a similar number of squares. Each square represents the number of blocks worked over—ie, if the 'petal' covers three squares there are two holes missed between inserting and drawing out the needle. Work the motifs in a pleasing design on the fabric.





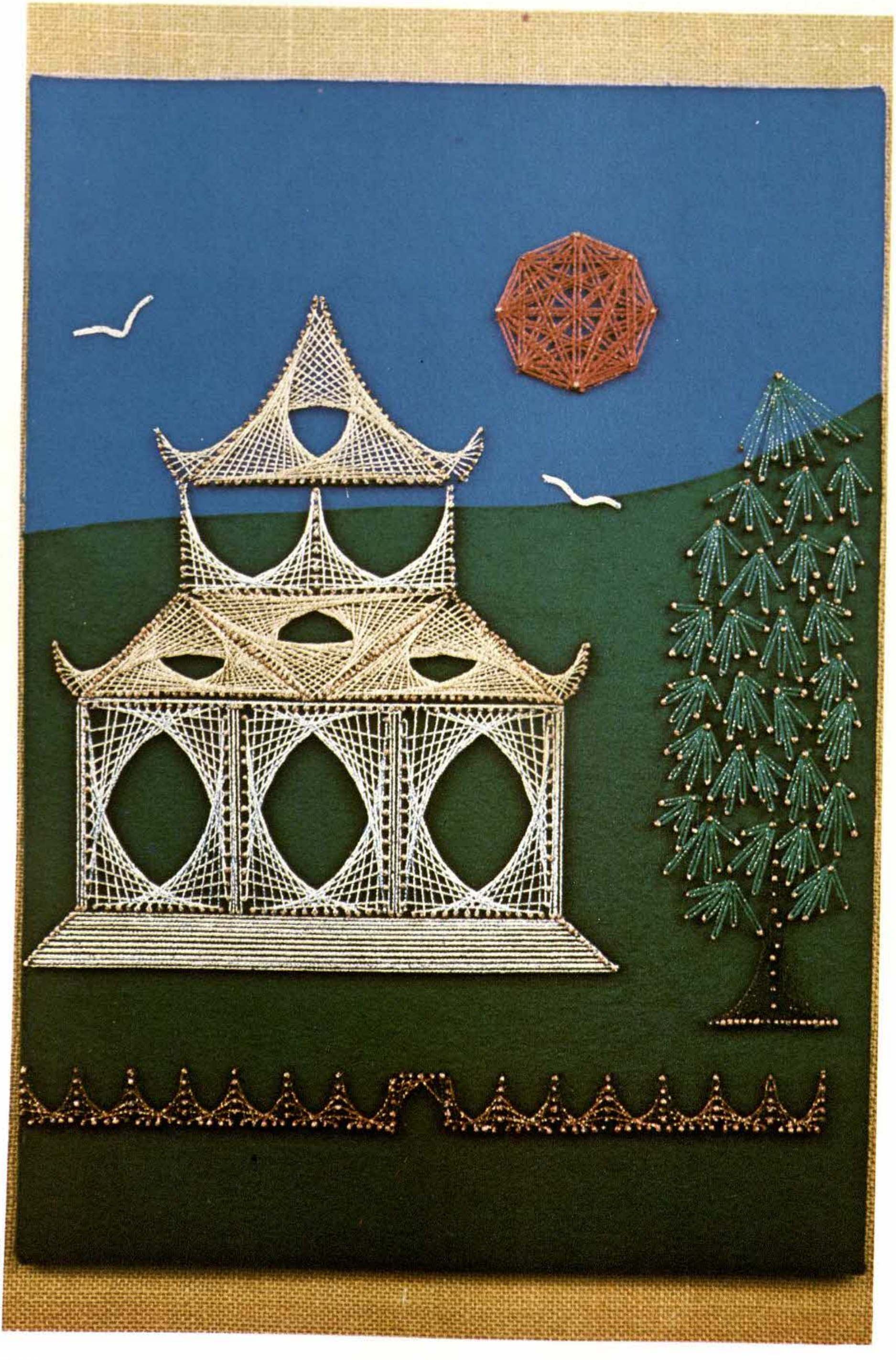


Bright and pale colours show up well against either dark brown or cream backgrounds. The motifs may be arranged to make a pattern the same as, or similar to, the one opposite. The motifs given are only a few of the many you can work.

Picture making with pins

Yarn — pin art 3

This pagoda uses straight and curved lines to make a complete picture. The fir tree is effectively made up of tiny, random groups of pins threaded individually. The birds, although not wound round pins, add a light touch to the picture and suggest how other techniques can be introduced.



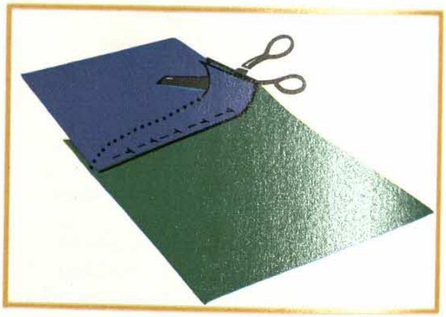
Pagoda picture

You will need:

Board 40cm x 55cm (16″x22″).
Green felt 45cm x 40cm (18″x16″).
Blue felt 45cm x 30cm (18″x12″).
Clear glue, scissors.
About 870 copper panel pins.
6 balls of yarn in six colours.

☐ Enlarge the design to 40cm x 55cm (16″x22″) as shown in Design know-how chapter 4, page 112.

☐ Draw the 'horizon' on to the wrong side of the blue felt, close to one 45cm (18″) edge. Place one 45cm (18″) edge of the green felt over the right side of the blue piece, so that it just overlaps the horizon and pin it in position. Turn the felt over and cut along the line drawn on the blue felt (fig.1). This gives two identical outlines.



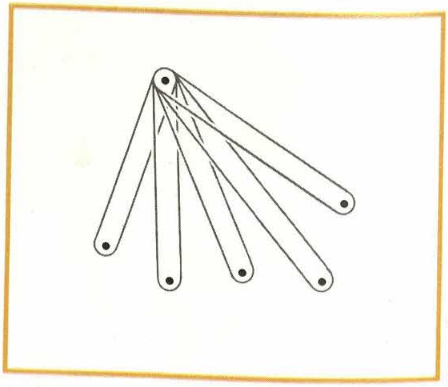
1. *Cut horizon along marked lines.*

☐ Dab a little glue near the edges of the horizon lines. Mark the position of the horizon on the board and place the pieces of felt on it, edge to edge. Allow glue to dry.

☐ Finish covering the board (see Pin art chapter 2, page 292).

Positioning the nails. Because it is confusing to show all the nails necessary to make up the tree, only the main nail, ie the one that is wound around each time, is given on the trace pattern

☐ Hammer groups of 5 or 6 nails, or 9 for the top of the tree, in irregular fan-shapes below the main nail, arranging them as you fancy (fig.2).



Trevor Lawrence

2. *Wind yarn around nails as shown.*

This scene combines geometrical shapes given previously. In Twilleys Goldfingering; designed by Graham Elson.

☐ The straight lines indicate where to hammer in the nails. Most of the lines are made up of 6 or 8 nails per 2.5cm (1").

☐ The sun is shaped around 8 nails.

☐ The birds are made of two strands of yarn held together with a dab of glue and then stuck to the backing in the places indicated.

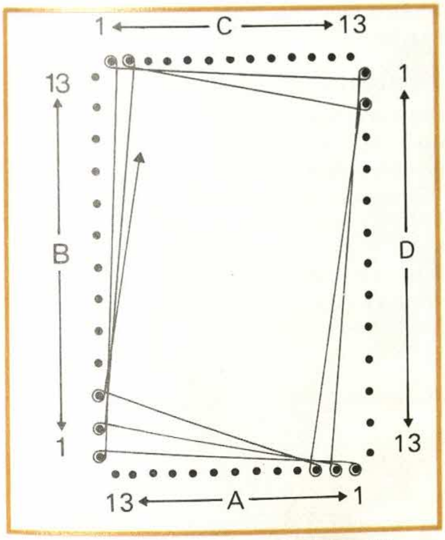
Breakdown of design. Working from top to bottom of the pagoda and using the basic methods given in Pin art chapter 1, page 164:

☐ Wind the triangle as for the basic triangle and wind the roof edging as for right angles.

☐ Wind the two rectangles as for four right angles.

☐ Thread the three triangles as for two triangles—and then thread the centre one, using the nails already engaged to the right and left.

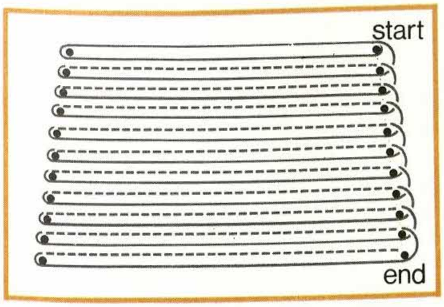
☐ Thread the three oblongs individually as shown in fig.3. The sequence is A1 to B1, B1 to C1, C1 to D1, D1 to A2, A2 to B2, B2 to C2, etc.



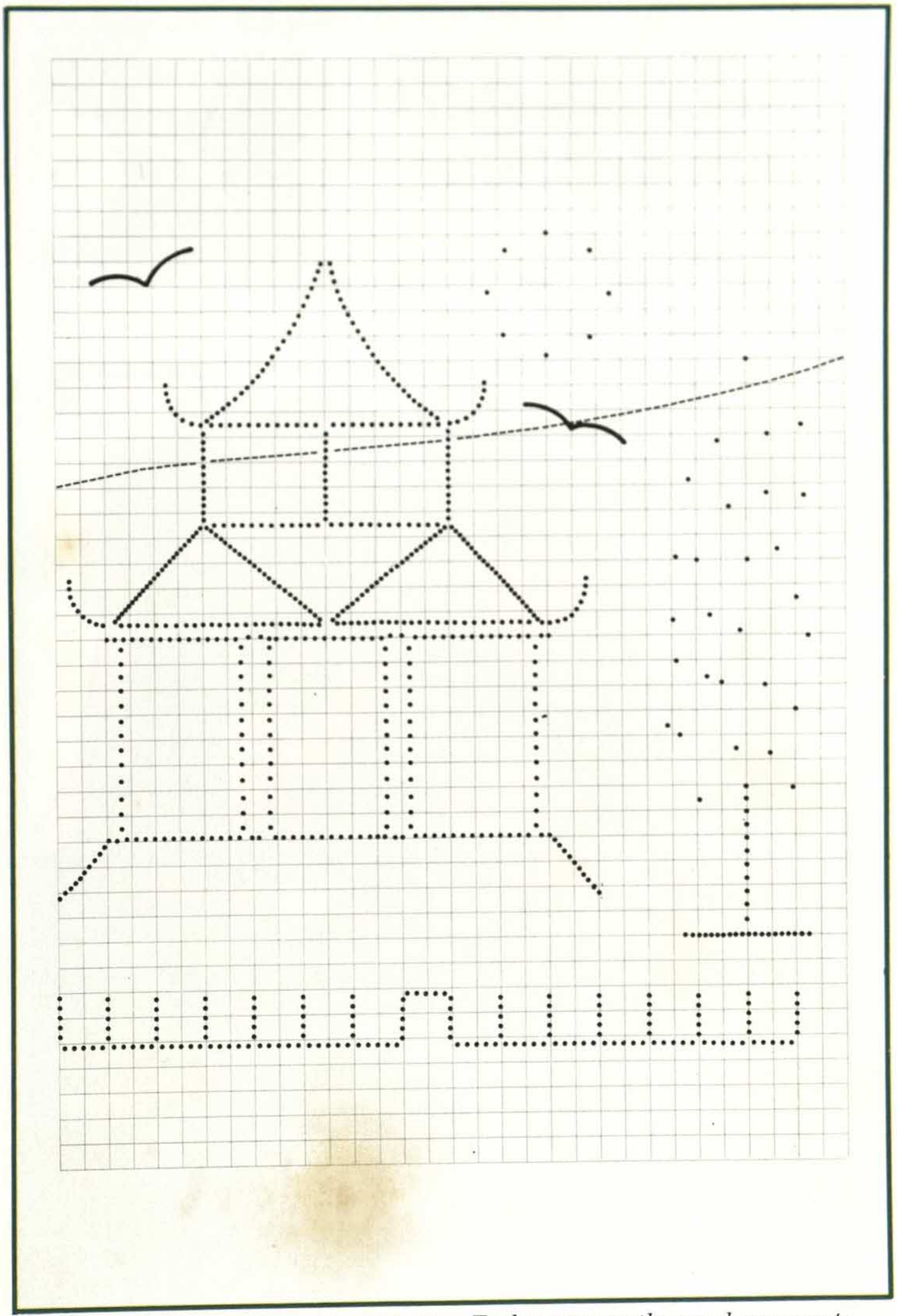
3. *The winding sequence for the oblongs.*

☐ Since the nails for the vertical sides of the oblongs are set slightly apart, fill the space between them with four strands of yarn wound around two nails set between the top and base of the oblongs.

☐ To make the steps of the pagoda, wind as shown in fig.4.



4. *The method for winding the steps.*



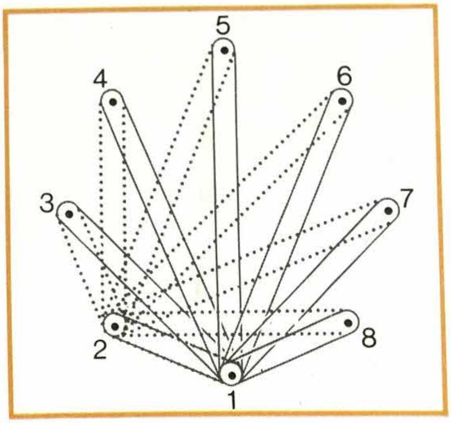
☐ Make the fence with a pair of right angles, reversing the centre of the fence so that the angles are the other way up.

☐ Make the tree trunk with two right angles.

☐ Make the leaves on the tree by winding the yarn around the main pin (shown on the trace pattern) each time and around the accompanying group of nails only once.

☐ To make the sun, thread eight times in the same pattern (fig.5) using each nail once to carry the seven windings. Tie yarn to 1, wind from 1 to 2, 1 to 3, 1 to 4, 1 to 5, 1 to 6, 1 to 7, 1 to 8 and back. Fasten off. Tie yarn to 2, wind from 2 to 3, 2 to 4, 2 to 5, 2 to 6, 2 to 7, 2 to 8, 2 to 1 and back to 2, tie off. Tie yarn to 3, wind from 3 to 4, 3 to 5, etc.

Each square on the graph represents 12.5mm ($\frac{1}{2}$") so enlarge on graph paper.



5. *The winding sequence for the sun.*

Making a start with appliqué

Cloth — appliqué 1

Appliqué is very similar to collage, except that the shapes cut in one fabric are applied to another with stitches rather than glue. In its simplest form appliqué can be tackled by any beginner, results are quick and satisfactory and the easiest stitches can be used.

Appliqué can be left plain or richly decorated, worked in coarse or delicate fabrics. The more advanced methods for materials other than felt are discussed in later chapters.

Appliqué can be used to decorate clothes, curtains, bedspreads, cushions and, of course, to build up pictures.

Fabric choice

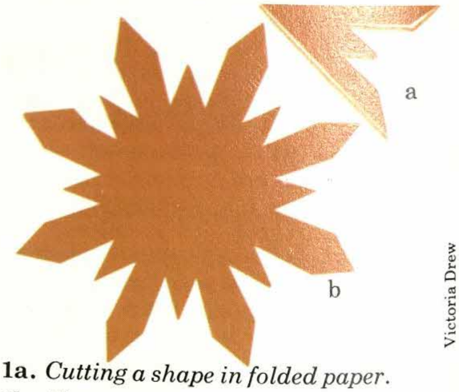
Choice of fabrics and surface decoration will depend upon whether or not the article is intended for hard wear and laundering. An appliqué motif on a baby's garment, for instance, is best made in a washable cotton.

It is easiest to begin with non-fraying fabrics. Felt is particularly easy to work with, is fun for quickly-made objects and ideal for creating pictures, when anything from string to sequins can be added.

Design inspiration

Start by thinking about pattern making and by working out designs with scissors and some folded paper, like those made by children.

Fold a piece of paper into quarters and then triangles, experiment with cutting out various shapes (fig.1a). then open out the paper to see the effect you have produced (fig.1b).

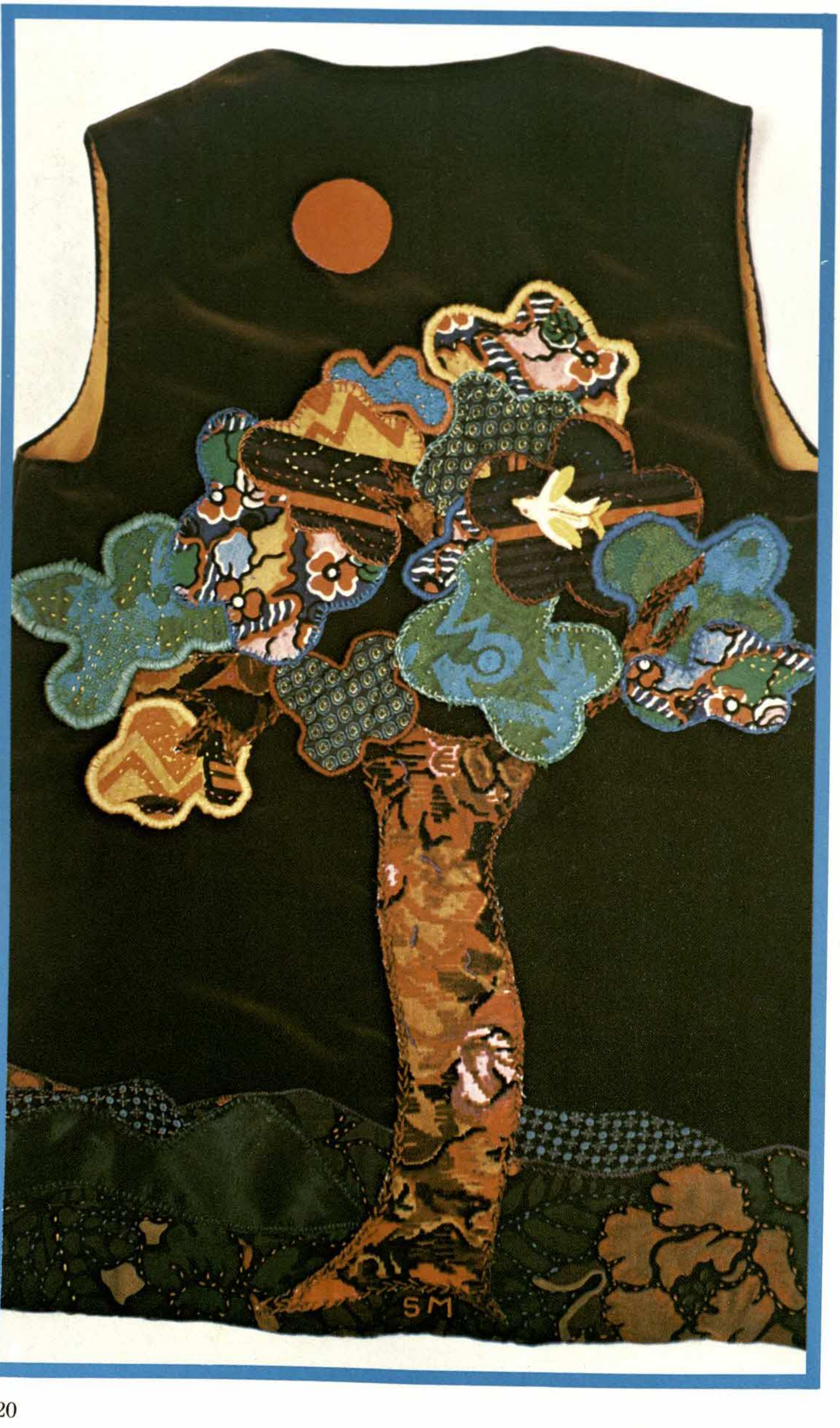


Victoria Drew

1a. *Cutting a shape in folded paper.*
1b. *The complete shape opened out.*

As you grow more skilled you can experiment with fruit shapes, stars, initials, the outlines of familiar domestic objects like a jug or teapot, or the silhouettes of flowers and leaves.

Remember when you draw a symmetrical shape to fold the pattern paper in half, so that both sides are exactly equal when you open the paper.

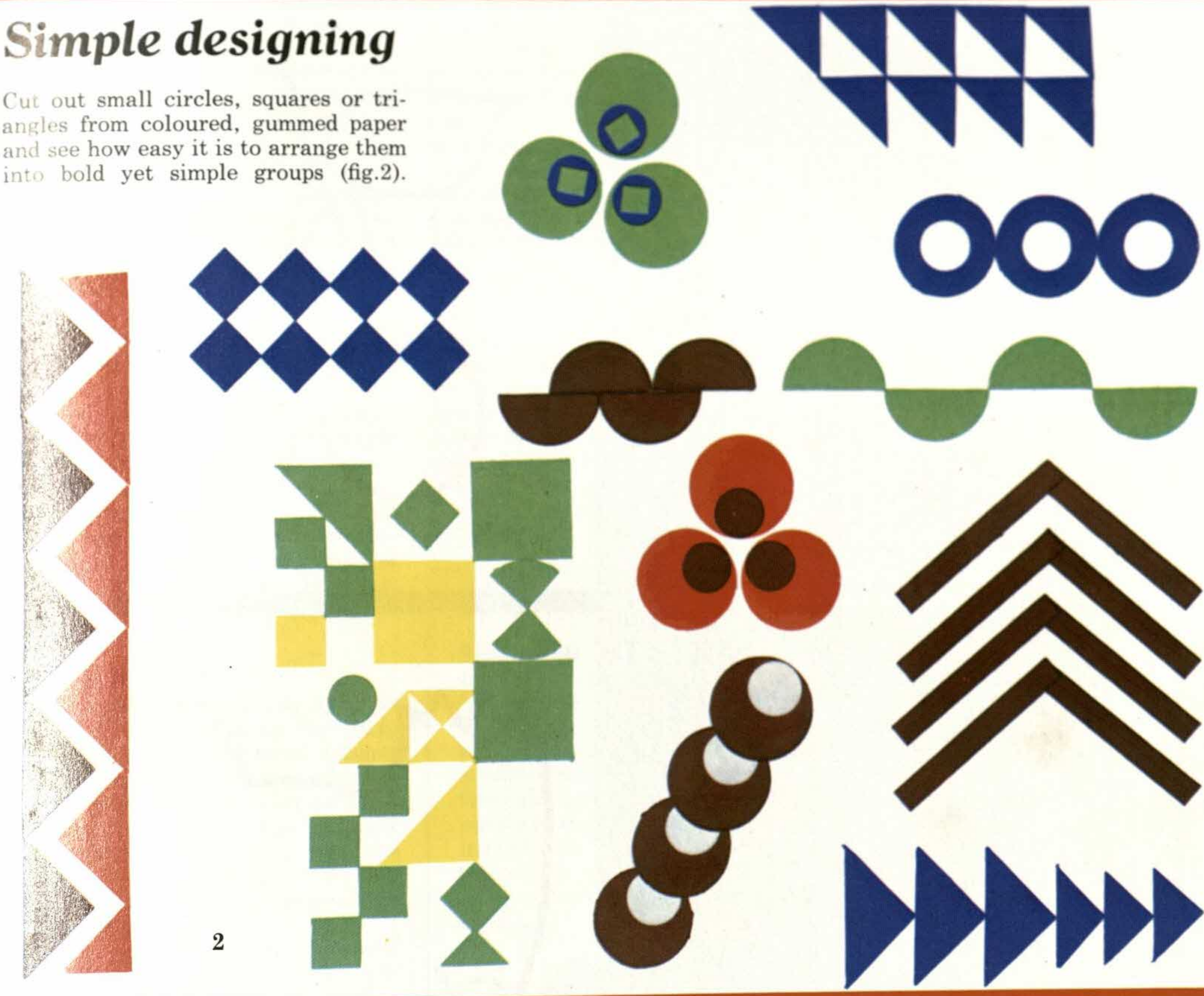


S. Maxwell/Crafts Advisory Committee

Appliqué waistcoat worked with embroidery stitches, including satin, buttonhole and running stitch. Designed by Susan's Cottage Industry.

Simple designing

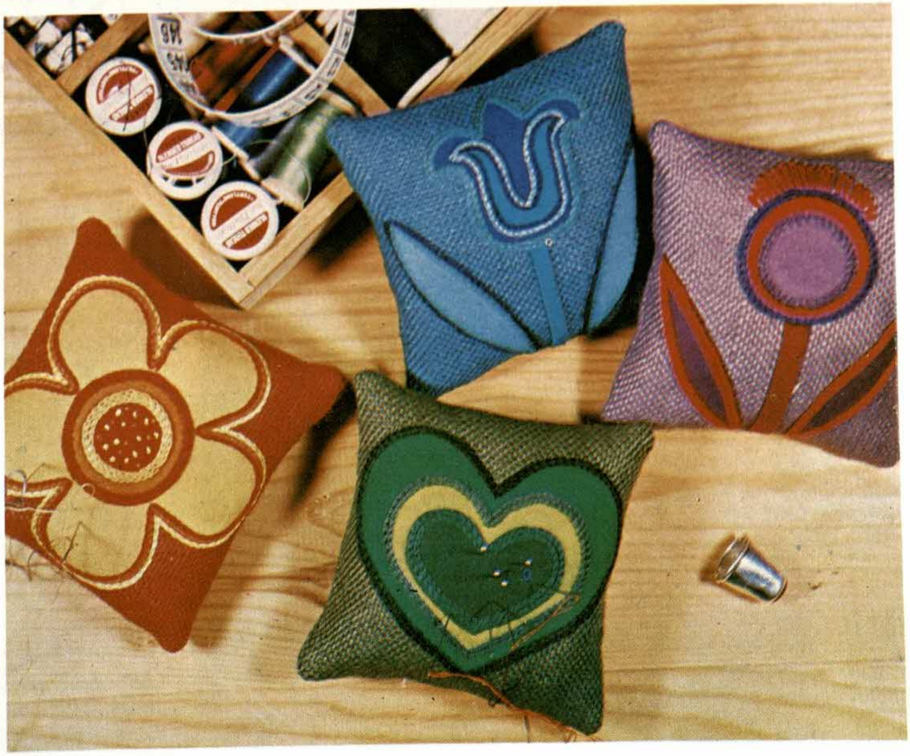
Cut out small circles, squares or triangles from coloured, gummed paper and see how easy it is to arrange them into bold yet simple groups (fig.2).



K. Designs

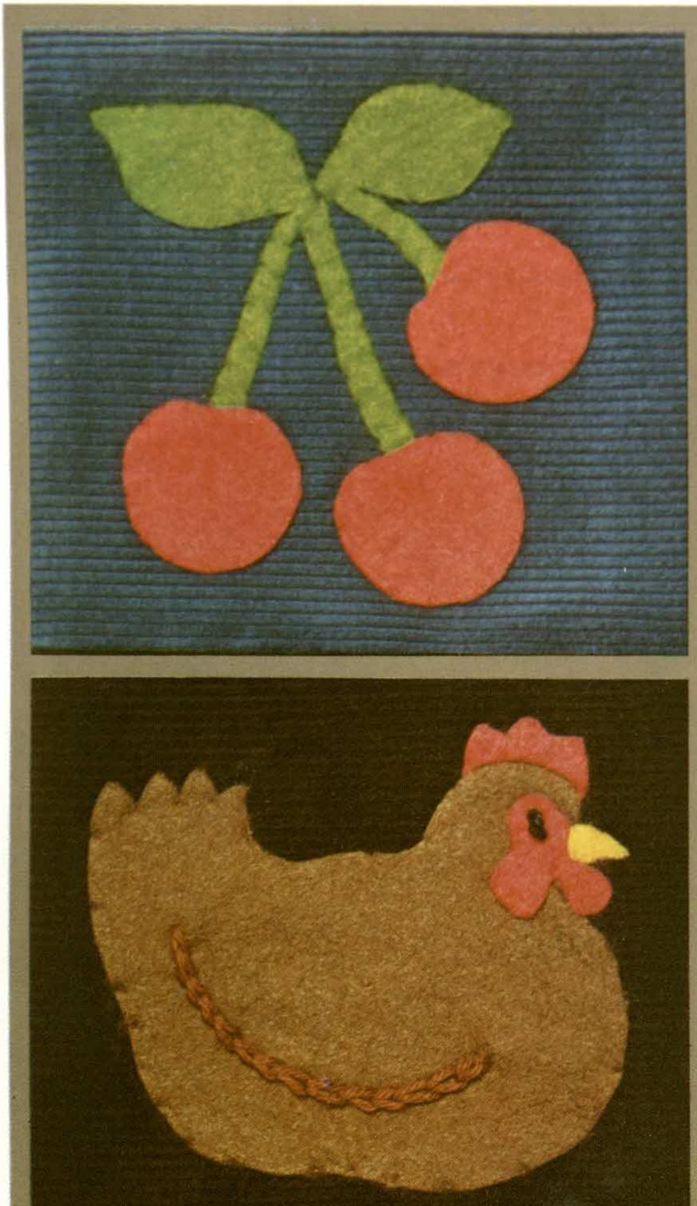
Children's book illustrations are full of adaptable possibilities, from fairy-tale animals to supermen. Trace a favourite character and enlarge or reduce the scale to the size you need (see Design know-how chapter 4, page 112). Birds or animals, cars or trains, clowns, cartoons, even dinosaurs, can all be adapted in this way as long as the basic shapes are sufficiently simple to be easily cut out and applied.

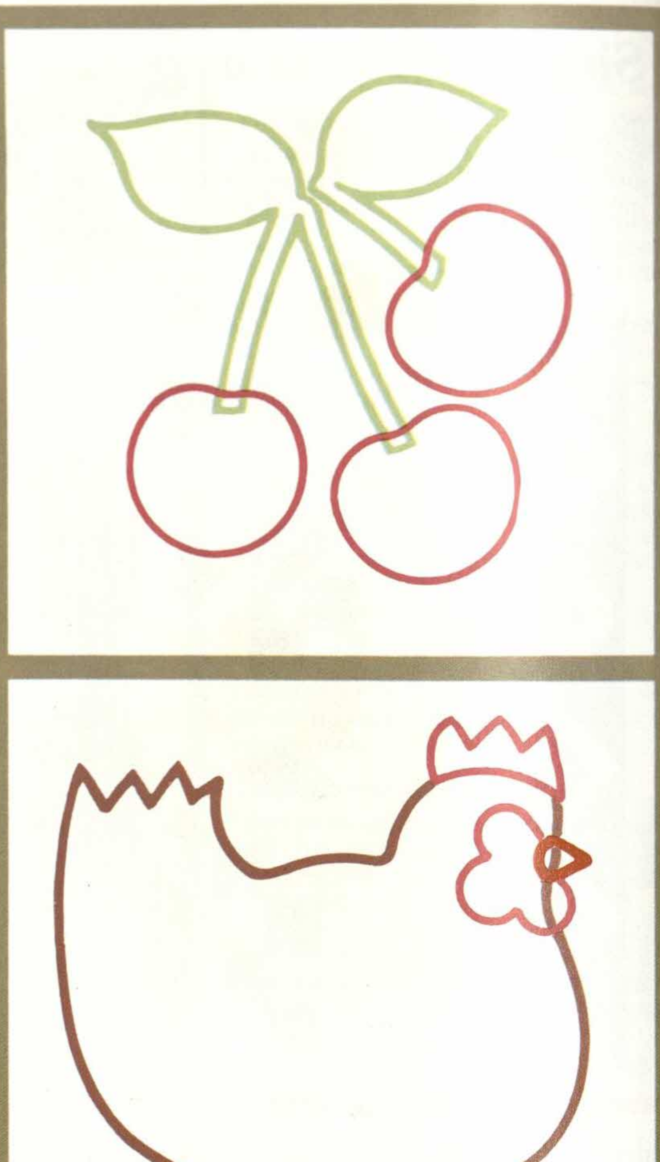
When you progress to more sophisticated designs, go to your local museum or library for inspiration. The flamboyant shapes used in Art Deco are ideal for appliqué, so are many oriental designs and the work of some primitive artists. Study the earliest forms of appliqué; you can find examples of the beautiful counterchanged designs that were used in ecclesiastical banners centuries ago, where two colours were intricately fitted together and used alternately for background and motif.



Linen pin cushions with felt motifs. Main motifs are built up of layers of felt applied one on top of the other.

PAF International





Left: felt motifs on corduroy squares; details in chain stitch and a French knot. Above: motif patterns.

Roger Phillips

Trevor Lawrence

Preparing felt motifs

Using thick paper, cut a template of the shape required. If there are several parts to the motif cut a template of the complete silhouette, then cut separate templates for each of the various parts.

Place the templates on the appropriate felt pieces and draw round them with a well-sharpened, soft pencil on the wrong side, so that pencil marks do not show on the finished work.

Cut out the motifs, using small, sharp scissors.

Positioning motifs

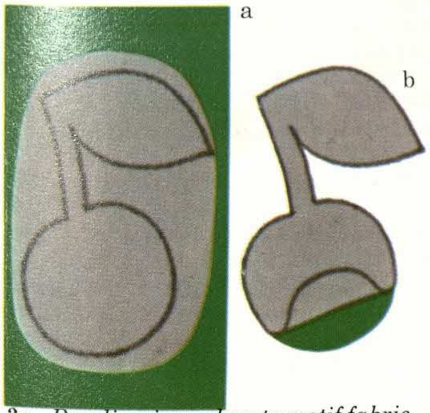
Carefully position the motifs on the right side of the background fabric, remembering to allow sufficient margin on the background fabric for any seaming required.

If the appliqué is to be centrally placed on a square of fabric, fold two diagonal lines from corner to corner of the square; the centre will be where they cross. Match this with the central point of the motif.

Joining methods

Bonding. For quick results appliqué shapes can be bonded to the background. The bonding material consists of a non-woven adhesive web which is prepared with a special paper backing. Cut a piece of bonding slightly larger than the motif, draw the outline of the shape required on to the paper backing and iron on to the wrong side of the motif material (fig.3a).

Allow to cool and cut out the motif shape. The non-woven adhesive web is now fused to the back of the motif.



Victoria Drew

3a. *Bonding ironed on to motif fabric.*
3b. *Peeling the backing from motif.*

Peel off paper (fig.3b), place motif, right side up, on to the background fabric and iron into place. Use a steam iron or a dry iron and a damp cloth. Fabric bonded in this way can then have decorative stitching added around the edge.

This method is suitable for most fabrics except delicate ones and some, like velvet, which need special care.

Another simple technique is to use a little fabric adhesive, such as Copydex, on the back of the motif, taking care not to go right up to the edges, then add decorative hand or machine stitching.

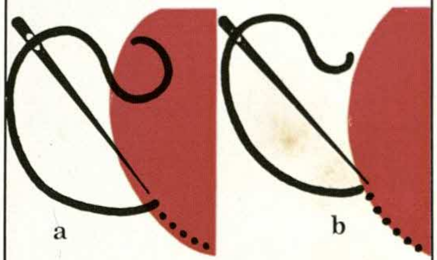
Stitching felt motifs. Small motifs can be easily stitched in the hand so long as care is taken to keep the surface flat, but it is advisable to use an embroidery hoop or tapestry frame to hold the fabric taut on larger projects. Tack the motif in place and sew to the background, making tiny stab stitches in exactly matching thread. If the stitching is not intended to be part of the decoration it should be as unobtrusive as possible.

Alternatively, you can use a spaced blanket (simple buttonhole) stitch, worked with embroidery thread, to produce a strong, decorative edge on the motif.

Basic stitches

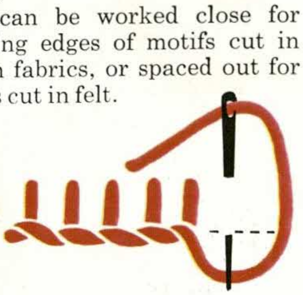
Stab stitch

Either: bring needle up through background fabric and motif, close to the edge of motif, then, making a very small stitch, take needle down again through the two thicknesses (fig.a) Or: bring needle up from background fabric immediately outside the edge of the motif, then take it down again a fraction inside the edge (fig.b).



Blanket (simple buttonhole) stitch

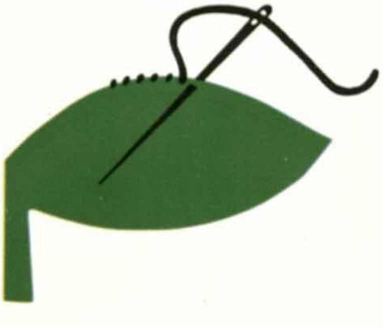
This can be worked close for securing edges of motifs cut in woven fabrics, or spaced out for motifs cut in felt.



Outline stitching. Details can be picked out with simple embroidery stitches, such as satin stitch or French knots. If you wish to emphasize the outlines you can add couching or chain stitch in a contrasting embroidery thread.

Non-fraying woven fabrics

You can cut out motifs in most firmly woven fabrics and apply them successfully without turning under the edges. Choose a fabric of the same or a lighter weight than that used for the background and keep the shapes simple. When cutting the motif ensure, where possible, that the grain on the motif matches that of the background fabric. Cut out the motif and work oversewing close to the edge (fig.4). Find the position for the motif and tack it on to the background fabric. Stitch into place with closely worked blanket stitch, covering the oversewing completely.



4. *Oversewing the edges of a motif before applying with buttonhole stitch.*

Using appliqué motifs

The patterns given in this chapter, enlarged if necessary, can be used in a number of ways.

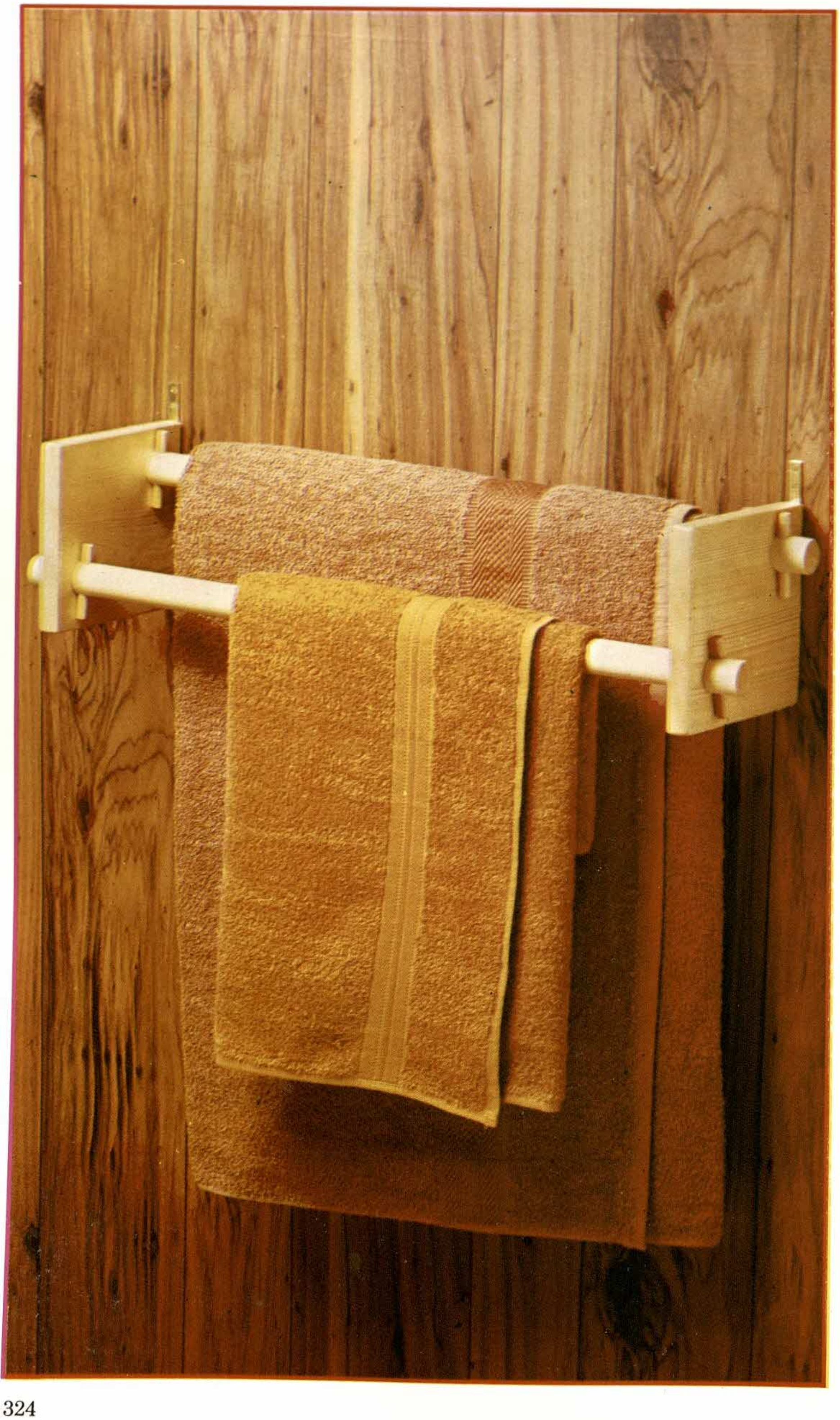
Pot holder. Start with something small; make a pot holder for the kitchen from two squares of felt. Stab stitch the plump chicken motif to one square, place the two pieces of felt together with a piece of wadding sandwiched in between, then machine stitch the layers together and pink the edges to finish.

Child's bed cover. Multiply the motifs to make a child's bed-cover. Alternate the colours of the background squares to make a chequerboard effect and join them together by hand or machine (see Patchwork chapters 1 and 2, pages 154 and 180). Line the cover and interline it with synthetic wadding (see Patchwork chapter 2, page 180).

Patches for clothes. The apple motif, cut (without its stalk) in a tough non-fraying cotton, would make a fine patch for the knee of a child's jeans. It is essential, when cutting the motif, to make sure that the grains of motif and background fabric match, to avoid the motif splitting and puckering.

Girl's novelty apron. Any of the motifs cut in pretty printed cotton would add a charming individual touch to a little girl's apron or plain dress.

Dowels for joints and racks



Dowels

A dowel is a rod-like piece of wood with a round cross-section. Dowels are referred to by their diameter and are available in various sizes up to 2.5cm (1″).

One reason for the versatility of dowels is that they are so easy to join to other pieces of wood—all you need is a drilled hole the same diameter as the dowel. It's much easier to make a round hole with a drill than to make a square hole, which requires chisels, mallets and accurate marking.

Before the mass production of nails and screws, hand-made dowels or 'pegs' were often used to secure the join between two pieces of wood—this is often seen in the roofing structure of old barns.

Dowels can be used in many ways—to make struts or dividers as in plate or record racks; to make racks for shoes, towels; to make shelves for hats or phone books, or to make legs and supports for shelves.

In the towel rack illustrated the dowels are exposed and are an intrinsic feature of the design. To connect them to the side pieces requires a simple operation of drilling a hole and pushing the dowels in, with a drop of glue to hold them in position.

You can use a power tool to do the work, but hand tools are more satisfying to use for smaller projects and have the advantage of being able to make larger holes for larger dowels.

To make the towel rack

This project involves simple, versatile techniques—drilling and using dowels. Small pieces of dowel are used to 'lock' the ends of the rack in position. It is an awkward operation drilling the holes for the small dowels so you can leave them out and simply glue and nail the side pieces in position if you prefer.

You will need:

Softwood 38cm x 15cm (15″x6″), 2.5cm (1″) thick.

Dowel 2.5cm (1″) diameter and 127cm (50″) long.

Dowel 6mm ($\frac{1}{4}$″) diameter and 48cm (19″) long (optional) or 4 panel pins 3cm ($1\frac{1}{4}$″) long.

Fine grade glasspaper.

Wood glue.

2 brass strips 6cm ($2\frac{1}{4}$″) long with 4 holes in each strip and screws for attaching the rack to the wall.

You may not be able to buy the wood and dowel to the exact lengths given, but any pieces left over are always useful for making something else. Make sure that the dowels you use are the same size as the drill bits.

This towel rail is made by drilling and inserting pieces of dowel through the holes. Designed by Alf Martensson.

Tool box

Drills, braces, drill bits

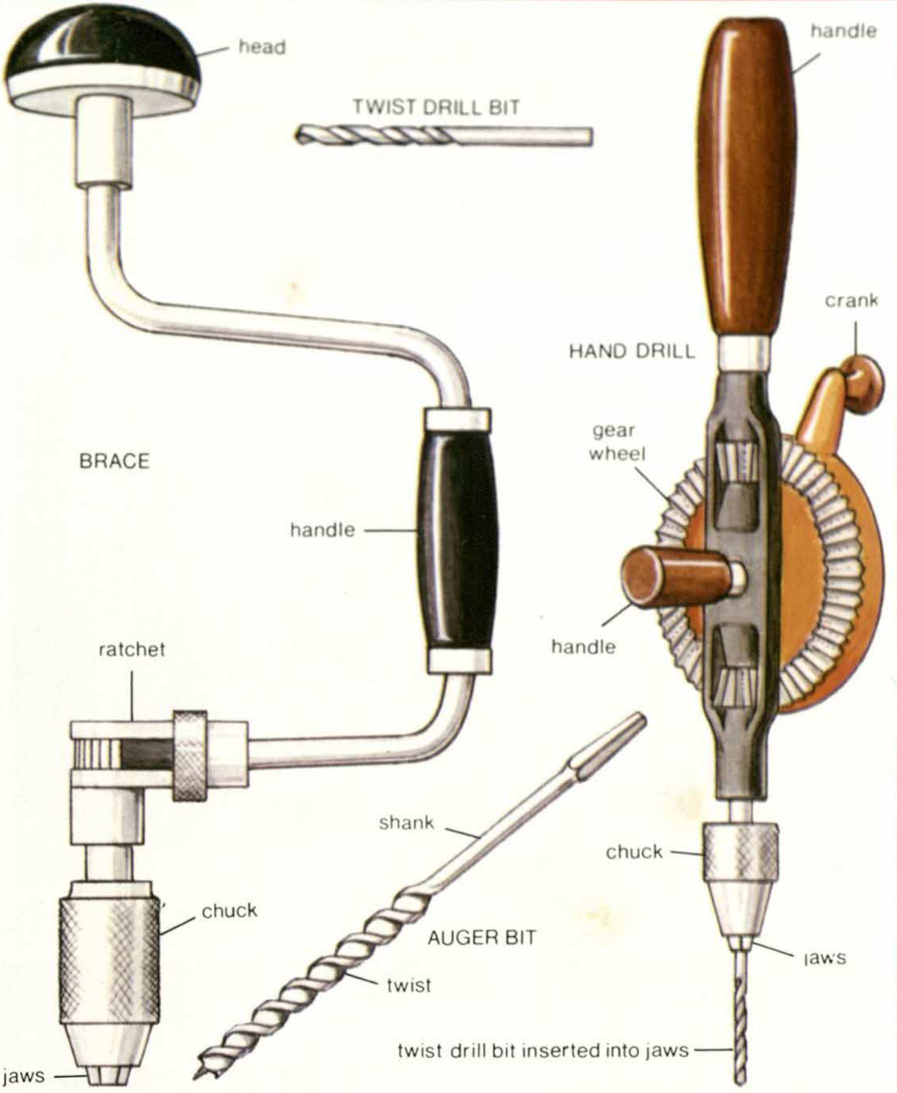
The bit is the part that actually cuts the wood. It is fitted into either a brace or hand drill. The large diameter auger bits—from 6mm (¼″) to 25mm (1″) diameter—are usually used with a brace and the smaller twist drill bits with a hand drill.

The hand drill is for smaller, lighter work whereas, with the brace, you can drill holes up to 75mm (3″) in diameter using special expansion bits.

If you do not have access to a brace and have to buy one, then the rachet type is recommended. A brace and a hand drill are essential to a tool kit.

The bit fits into the jaws of the drill. The jaws open or close with the turning of the chuck. When the jaws are open insert the bit and tighten up well.

To drill a hole mark the centre of the hole with a pencil and, using either a nail or nail punch, make a small hole to start the drilling. This prevents the bit from slipping and ensures that the hole will be exactly where you want it. Place the point of the bit into this hole and turn the handle slowly. Make sure that you hold the drill at 90° to the piece of wood—the drill must be in this position throughout the operation.



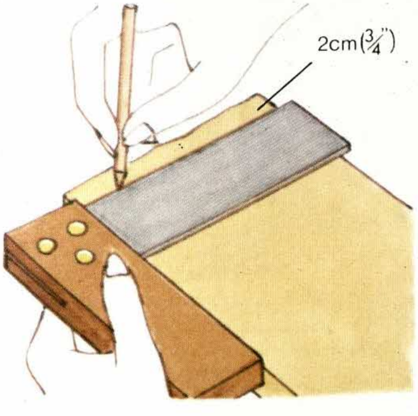
Tools

Brace with 2.5cm (1″) bit.

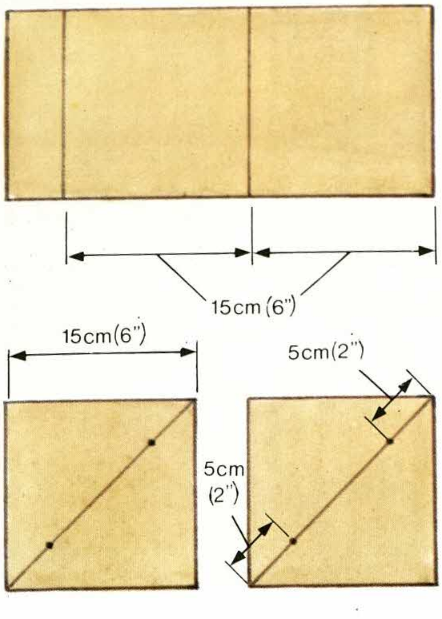
Hand drill with 6mm (¼″) bit—you will only need this if you are using the 6mm (¼″) dowel.

Saw, nail-punch, hammer, carpenter's square, G–clamp or vice.

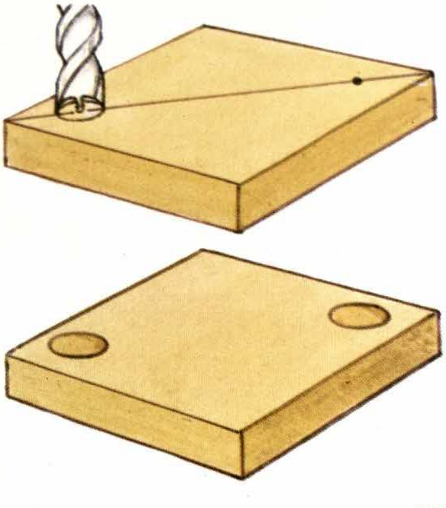
1. Using the carpenter's square, square the short end of the softwood about 2cm (¾″) from the end. Cut off on the waste side.



2. Mark off lengths and cut as shown.
3. Draw diagonals as shown and make a mark 5cm (2″) from each corner and punch a small hole.

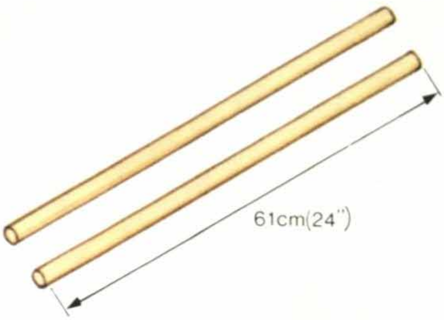


4. Using the brace with 2.5cm (1″) bit, drill a hole on each mark. When the bit pierces through the bottom, turn the wood over and complete the hole from this side.
5. Sand both pieces until smooth. You can round the ends slightly to improve the appearance.

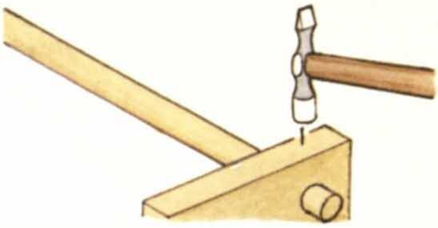


Paul Williams

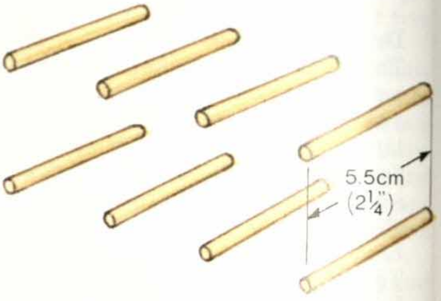
6. Cut 2 pieces of dowel 61cm (24") long from the 2.5cm (1") dowel.



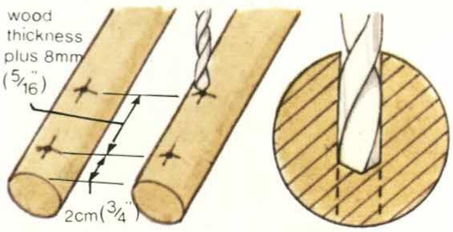
7. If you are not using the 6mm (¼") dowel insert the 2 pieces of dowel through the holes in the softwood sides and let 2.5cm (1") protrude from the ends. Secure the dowels with 3cm (1¼") panel pins.



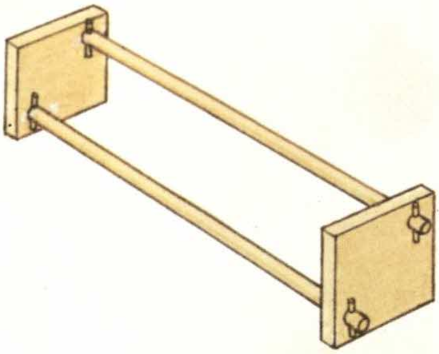
8. To assemble the rack using the 6mm (¼") dowel cut 8 pieces 5.5cm (2¼") long.



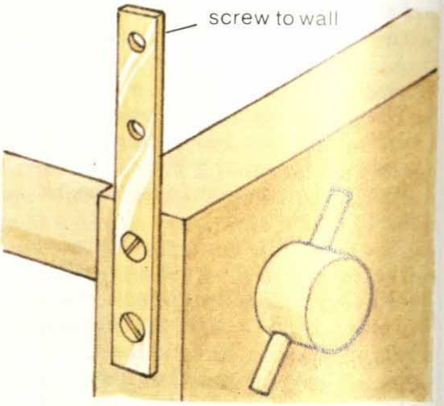
9. At 2cm (¾") from each end of the two 2.5cm (1") dowels make a mark as shown. Make another mark 3.2cm (1¼") inside each of these making 8 in all. Punch a small hole at each of the marks
10. Secure the dowel and drill a hole with the 6mm (¼") bit on each of the 8 marks. Make sure to drill the hole through the thickest part of the dowel.



11. Sand all the ends smooth and assemble as shown using a bit of wood glue if necessary. Paint or stain the rack as required.

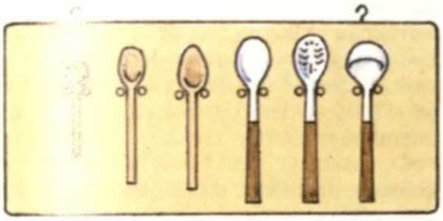


12. Attach the rack to the wall using brass strips as shown.

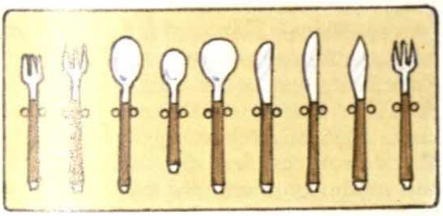


Alternative ideas

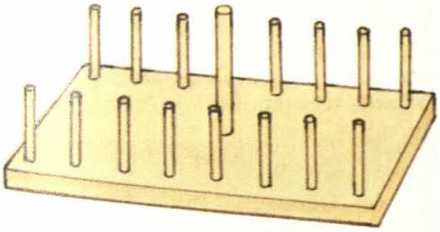
This rack can be made to hold spoons used for cooking. You can alter the size to suit metal or wooden spoons, in fact you can make it to hold most of your cooking utensils, including a soup ladle. To support the rack you can screw hooks into the top and suspend it from a shelf.



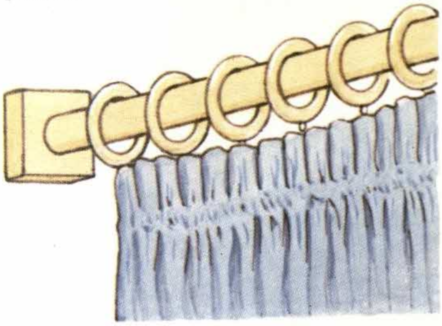
An alternative to the spoon rack is a cutlery tray. Make it to fit into an existing drawer and use it to keep knives, forks etc stacked together.



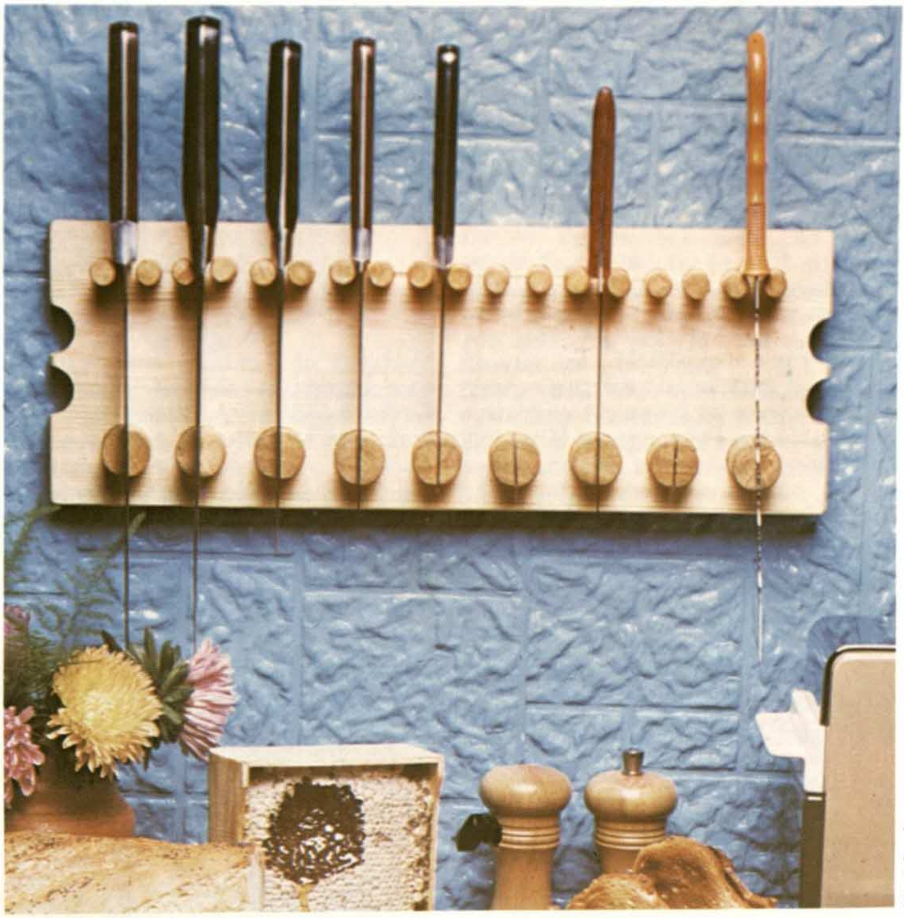
A toast rack is attractive and easy to make.
This type of rack can also be made on a larger scale to hold long-playing records.



A thick dowel used as a curtain rod for heavy curtains is attractive without a pelmet.



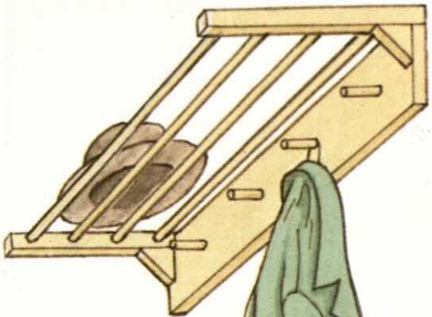
Left. Plate rack: to assemble base drill holes near ends of both main pieces making sure they do not coincide with one of the upright pieces of dowel.

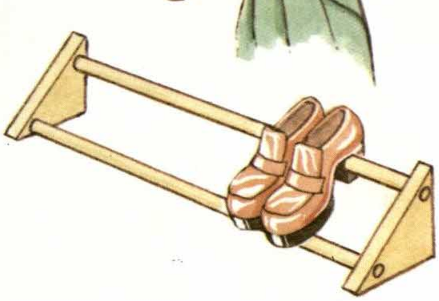


There is plenty of drilling practice in making this knife rack. A saw cut in the larger dowel secures the blade.

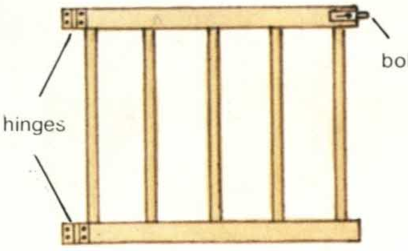
Chris Lewis

A hat rack is always useful and you can put it up somewhere convenient and out of the way. You can expand it by using a long, flat piece of wood with dowels interspersed at regular intervals from which to hang coats. You could also make a rack to run the length of a wardrobe to keep shoes tidy.

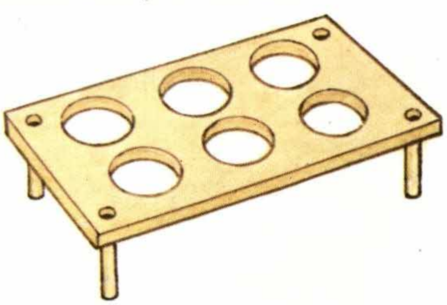




This gate is very useful to prevent children from falling downstairs or out of windows.



An egg rack is always useful and you can easily make it to hold more than six eggs. This particular rack can be stacked so that you can put any number together without damaging the eggs. Make the dowel supports long enough to prevent the eggs from being crushed. Do not push the dowels all the way through the wood but leave about 6mm ($\frac{1}{4}$") from the top to hold another rack secure when you stack them.

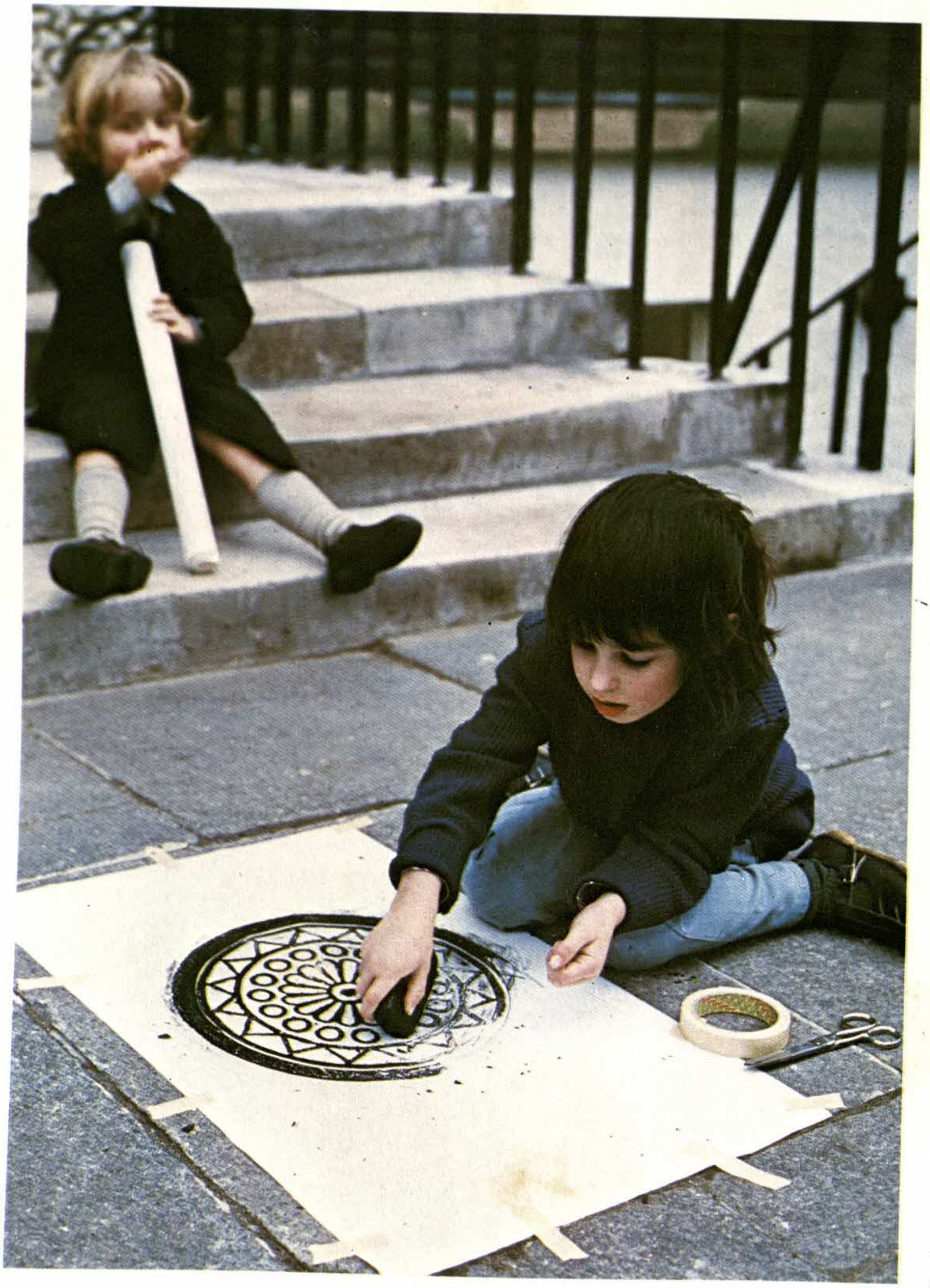


Making rubbings with heelball

Colour — printing 5

Rubbing is a remarkably easy way of copying a surface and for this reason children can enjoy it as much as grown-ups. The house and countryside are full of surfaces that can be rubbed, and a family outing to find and collect rubbed impressions is a delightful way to spend an afternoon.

Rubbings of memorial brasses in old churchyards or natural objects like leaves, wood grains, flowers, even tree bark, can all make interesting collections for scrapbooks or harmonious compositions which can be framed or mounted as wall hangings. The long shape of many church brasses, for example, make excellent wall decorations for narrow areas like stair landings.



Dick Miller

Many fine relief surfaces, such as coins and medals, where the design is slightly raised above the surface, are ideal for rubbing. Equally suitable are finely incised surfaces such as church brasses and brass name-plates or signs in which lines are engraved into the surface. It is this variation in surface texture which causes different marks on the paper and makes rubbing so effective. Rubbings can be transferred on to tracing paper and traced on to furniture or household items for decoration or, if they are small images, cut out and mounted on note cards. So whether your instincts are those of an antiquarian, decorator or collector you will find rubbing a useful outlet as well as being an enjoyable occupation in itself.

How to rub

There are three main methods of rubbing. The simplest is with pencil or crayon. Place a coin on a piece of paper and tape it down so that it can't move. Turn the paper over and rub with a pencil or crayon over the area of the coin. The design will begin to appear. Coins are a fascinating study and by this method you can record accurately the designs, dates and lettering of any interesting ones you come across.

The second, more professional, method uses heelball. The third method, a wet rubbing technique called dabbing, is explained in the next chapter.

Materials

Although relief surfaces can be rubbed with a number of materials, ranging from crayon to more sophisticated wet rubbing techniques, by far the most

Coal holes are one of the most popular rubbing surfaces. All you need is a special heelball rubbing stick, some paper, masking tape and elbow grease.

popular medium is heelball or cobbler's wax.

Heelball is a waxy compound available at most art supply shops in either stick or cake form. Sticks are more useful for small surfaces—a cake being about four times as big.

Heelball comes in several colours but black is the most commonly used for rubbing on white paper. The next most popular is gold heelball which is normally used on black paper. However, the more subtle contrasts, of say brown on cream paper or silver on dark brown paper, are very appealing. Heelball is available in black, white, bronze, gold, silver, red, brown and blue; the metallic shades are more expensive.

The best paper for rubbing is architect's detail paper, 70gm ($2\frac{1}{2}$oz) weight, although anything between 50gm–80gm ($1\frac{3}{4}$oz-$2\frac{3}{4}$oz) is adequate. This type of paper gives a good detailed transmission, resists tearing and comes in long rolls, suitable for working large surfaces. It is obtainable from most art supply shops. The paper is also available in black and can be bought in 76cm (30″), 101.5cm (40″) and sometimes 152.5cm (60″) widths. The last width is only needed for rubbing unusually broad figures.

These papers have a high rag content which is becoming increasingly expensive and difficult to get; in future, papers in this range may have less rag content and so be slightly weaker. Other papers, such as shelf lining papers, can be used for rubbing but these tend to yellow with age and may tear during rubbing. Air mail paper can be used to rub coins.

Masking tape is the third important material needed in rubbing. Always use short lengths that can be easily pulled up without harming the paper or the surface to which it is taped. (If there is a choice, use a low-tack variety, which means that the adhesive isn't too strong.)

Rubbing with heelball

Brush or wipe the surface you are rubbing with a soft brush or duster to get rid of any grit and dirt and check the surface with your hand to make sure it is clean.

Unroll enough paper to cover the surface, cut it off and secure it over the rubbing surface with masking tape. A piece of tape at each corner and at 23 cm (9″) intervals is adequate for an average size brass.

With your hand feel for the edge of the rubbing surface. If it is slightly raised, press the paper to make an outline of the form to guide you.

Rubbings of coins and medals can be used as decorative collages or by collectors and coin enthusiasts. Coins shown are from B. A. Seaby Ltd.

Jacob Roggeveen's Pacific Voyage
DISCOVERY OF SAMOA June 1722

1972 Tala from Samoa commemorating Jacob Roggeveen's Pacific voyage in 1722.

Silver siege piece struck in England during the civil war.

Charles X Municipal Counsel for Bordeaux by Barre De Cagné, 1828. Silver medal.

B. A. Seaby Ltd.

Mauritius 10 rupees, 1971. Made of cupro-nickel.

Start to rub with the heelball, taking care not to go beyond the outside line of the surface unless you plan to cut out the shape and mount it on another paper.

There is no eraser that can completely remove the heelball mark, so many people find it helpful to work with an edging card. By holding a piece of cardboard along the edge of the outline as you rub, you will prevent any slips from marking the paper.

Rub a small area at a time, pressing down hard on the paper with the heelball. Use short, even strokes and be sure to cover each area thoroughly before moving on to the next.

Paper stretches under pressure and rubbing it again later may blur the original image. It is possible, however, to go over each small area very gently first to get some inkling of the outline underneath before exerting maximum pressure. Beginners often find this method reassuring.

When you have completed your rubbing, but before you remove the tape, polish the waxed surface with a piece of nylon stocking. This will give it a lasting shine. Never polish a rubbing after it has been removed from the rubbing surface as it may smudge.

Different effects

Although black on white and gold on black are the classic rubbing colours, several other combinations produce interesting and attractive results.

Multi-colour images. Rubbings do not have to be confined to two colours but can be rubbed with several shades of heelball to produce a multi-coloured image with all the decorative effect of a painted figure.

A reverse image rubbing is another variation and is made using white heelball on white paper which is then coloured. This gives you the chance of broadening your choice of paper colours. To make, proceed as with all heelball rubbings and when complete, polish the wax with a nylon stocking. Then saturate a sponge with Indian ink or fabric dye and brush it over the surface of the paper. The image will emerge as the paper around it colours. Remove any excess colour with blotting paper and dry completely.

The difficulty lies in seeing what you are doing when rubbing white on white. This can be overcome somewhat by viewing the work from an angle at which the light shows up the gloss wax against the matt finished paper.

Things to rub

Church brasses are by far the most popular form of rubbing and England is the best place to find them. There are some 8,000 monumental brasses in England compared with 800 in the rest of Europe. They date from the 14th to the 19th centuries, the earliest being the finest and most interesting and showing knights in armour, priests, civilians and ladies. The figures vary from life-size to only a few inches high. A life-size knight may well take four hours to rub, a small figure only twenty minutes.

Details of large brasses—faces, animals at the feet, children, patterns of farthingales and heraldic shields—can make a fascinating scrapbook or series of framed prints.

Brass facsimiles. Modern materials have made it possible to produce brass replicas of church brasses from which rubbings are indistinguishable from rubbings of the original. In future, facsimile rubbings may well be the only ones allowed with many fine brasses, since repeated rubbings do tend to wear away surfaces.

Facsimiles also make it possible for people in other countries to make rubbings of church brasses, since replicas can be sent anywhere in the world.

If you want to rub an original brass in a churchyard you must always get permission first. Rubbing is not allowed on Sundays and sometimes a fee is charged.

Guidebooks to the locations of church brasses in Britain can be bought in bookshops.

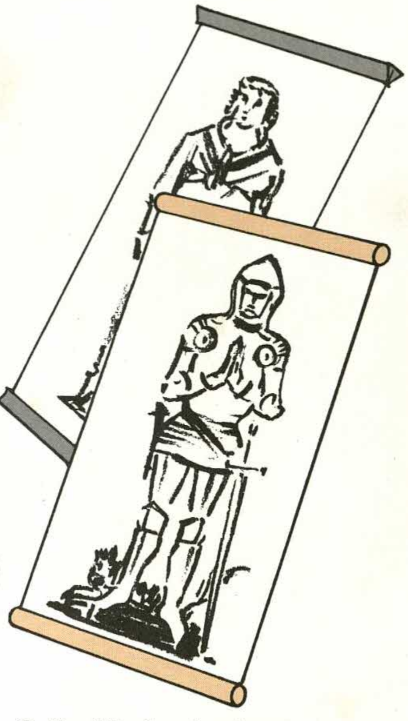
Cast iron. This great Victorian material, used for notices on walls, hole covers and decorative reliefs of all sorts, makes a very good rubbing surface. This is particularly true of hole covers. Set into streets and pavements like giant cast iron coins, they cover sewers, gas and water mains and coal shutes. They are covered in a multiplicity of geometric patterns and styles of calligraphy, interesting to collectors and decorators alike. When transferred on to a wall or a painted chest of drawers they can make highly original decorations.

Cut glass is another good rubbing surface and finely etched patterns can make decorative prints when rubbed. Marvellous floral designs and Art Nouveau signs in etched glass can be found in some English pubs, while glassware can provide wide ranging and delicate motifs.

Household objects are yet another source of decorative rubbings and the outline of familiar things, like furniture fittings, radiator covers, lace, horsebrasses, embossed wallpaper and the tooled designs on bookbindings, assume different and original appearances when copied on to paper. Several such objects can be used together to build up a single picture for framing.

Mounting rubbings

Mounting rubbings can be a tricky business, especially on stiff surfaces like board. Paper stretches when rubbed and it is difficult to glue it down flatly. Nevertheless, if special care is taken and the rubbing is not badly stretched, you can mount it yourself by cutting out and gluing to hessian, card or heavy paper. Use a rubber-based glue, preferably in aerosol form, to get a light, even spread. Mark where your rubbing will lie on the paper before you apply the glue. Beginners usually find it easier to cut rubbings out since this automatically removes any errors made by rubbing beyond the design surface.

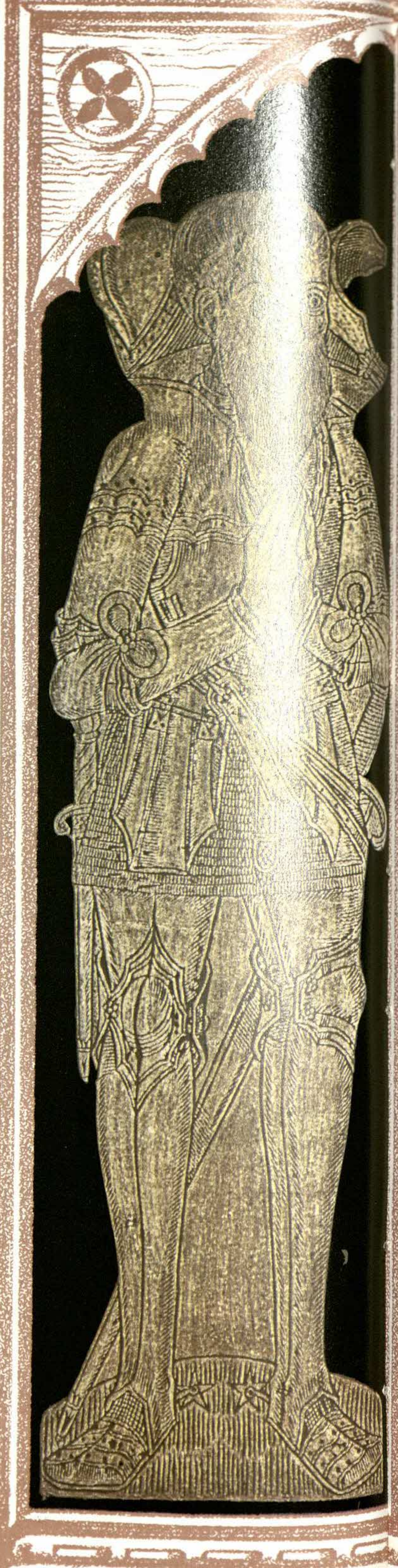


Trevor Lawrence

1. *Roller blind rods, dowels and poster mounts can be used to hang rubbings.*

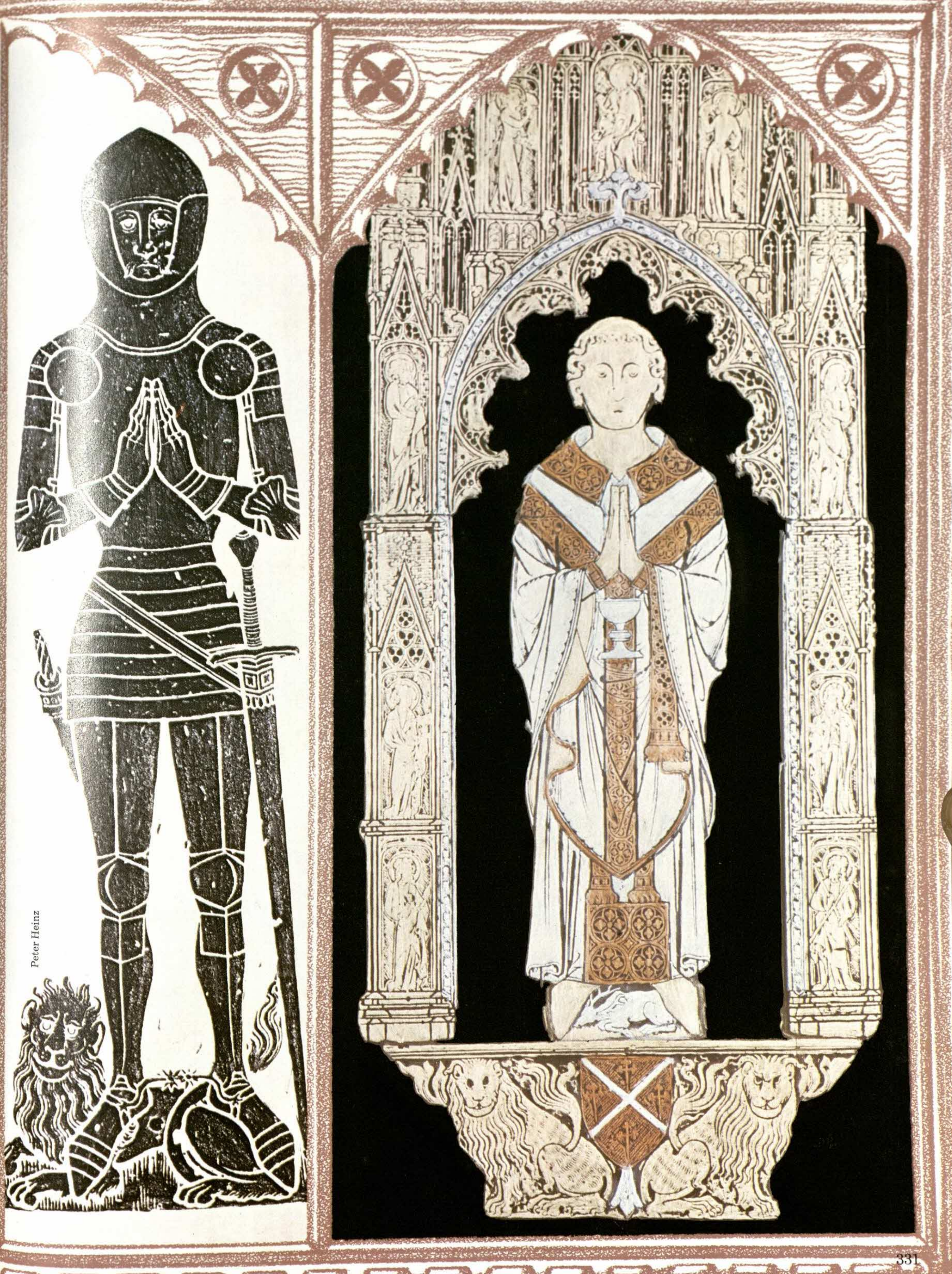
Rubbings can be hung by folding paper over a roller-blind rod or dowel, top and bottom, or by sliding a plastic poster mount along the top and bottom of the paper to keep it straight and taut (fig.1).

If you have a particularly nice rubbing and do not want to risk spoiling it, it is advisable to have it mounted professionally. Some framers specialize in rubbings and will mount them for you on coloured hessian or burlap board, or heat-seal them on hardboard and laminate the surface.



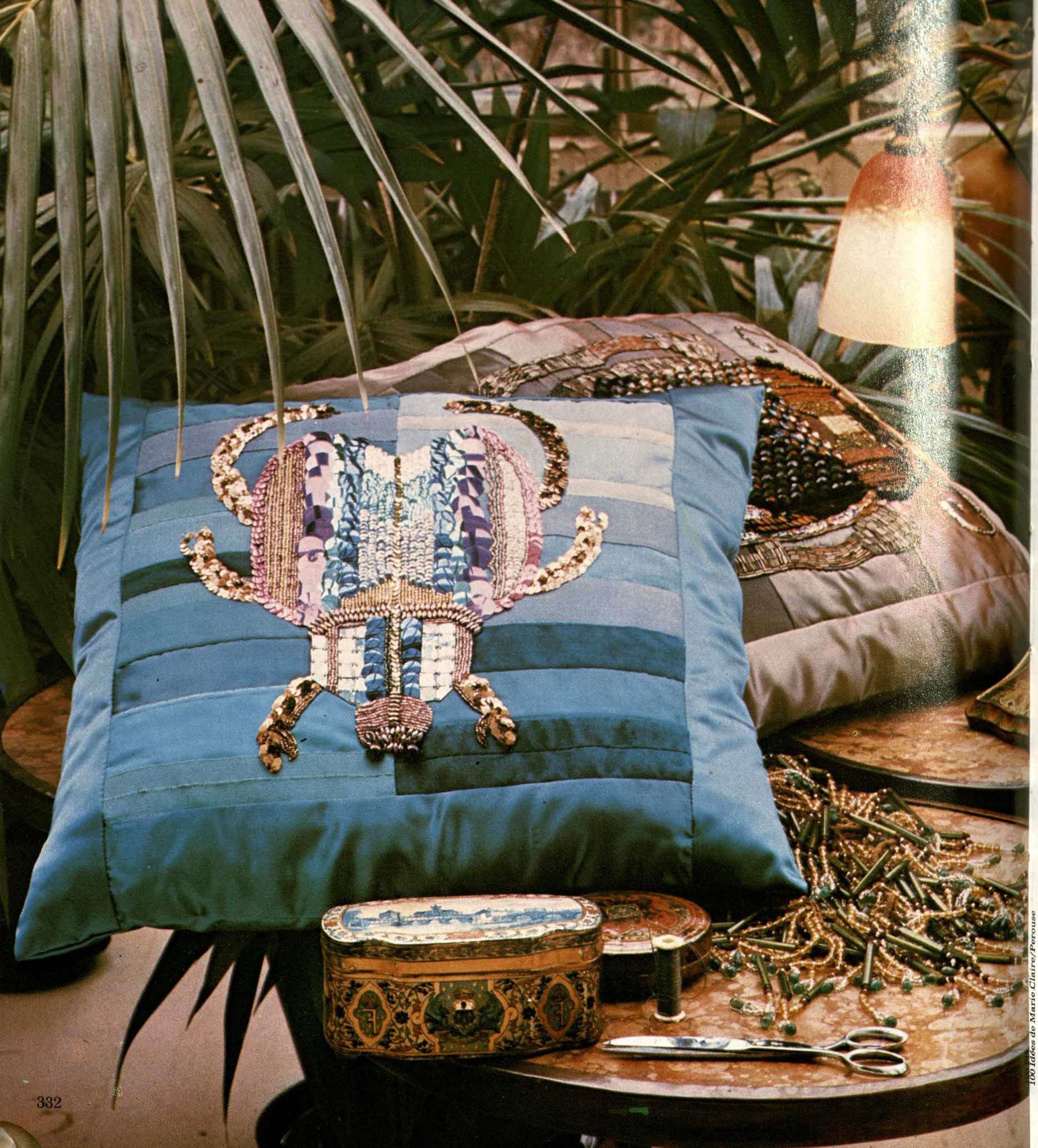
Monumental church brasses produce magnificent rubbings and with different colours of heelball you get very different effects. Gold on black paper and black heelball on white paper are traditional combinations, but other colours like the silver and bronze (far right) give a special 'picture' effect.

Alasdair Ogilvie



Peter Heinz

Embroidering cloth with beads



100 Idées de Marie Claire/Perouse

Since earliest times scarabs have been a sign of good luck. The ancient Egyptians carved them on semi-precious stones and wore them as talismanic jewelry.

It was the Egyptians who first made hand-carved beads and developed the art of bead embroidery, decorating their garments with elaborate beaded collars and their mummies with intricately beaded casings, often with a scarab motif. In the cushion shown here this ancient motif and technique are combined, this time in a style suitable for modern surroundings.

Methods of embroidery

Figs. 1–6 show how to attach different types of beads—sequins, bugles, rocaille, pearl oats and metallic squares. The scarab cushion can be made using these methods to apply the beads and sequins shown or you can choose your own colour scheme and beads and still refer to the diagrams to find out how to attach them.

Scarab cushion

For a cushion 40.5cm (16″) square.

You will need:

57cm ($\frac{5}{8}$yd) heavy satin 90cm (36″) wide.

Ribbon of various widths in a selection of blues and greys, in velvet and grosgrain—about 4m ($4\frac{1}{2}$yd).

43cm (17″) square of lightweight tailor's canvas.

Embroidery frame.

Tracing paper.

Needles.

Matching thread.

Scissors.

Mixed selection of beads: 2 large black beads for eyes; about 40 x 14mm ($\frac{9}{16}$″) side-hole sequins; also 10mm ($\frac{3}{8}$″), 8mm ($\frac{5}{16}$″) and 5mm ($\frac{1}{5}$″) centre-hole sequins; small glass bugles; rocaille; pearl oats; metallic squares—or your own choice.

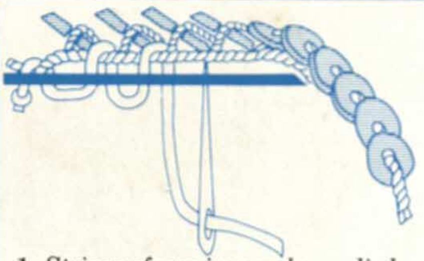
41cm sq (16″sq) cushion pad filled with crumbled foam, kapok, feathers.

To prepare embroidery surface. With a pencil mark off a border on the canvas 6.5cm ($2\frac{1}{2}$″) from outside edges. (Fig.7, A to B, C to D, E to F, G to H.) This creates the inner square to be covered with ribbon and embroidered.

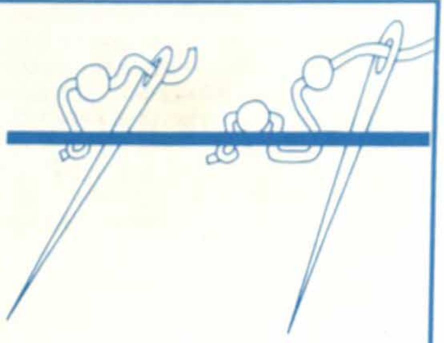
☐ Draw a line dividing the centre (Q to R) and place the canvas firmly in an embroidery frame.

☐ Cut ribbons into strips, each 18cm (7″) long, and arrange them on both sides of centre line (QR) so that selvedges overlap enough to slip stitch together later on. Raw edges should extend 1.2cm ($\frac{1}{2}$″) over outside border lines (IJ and KL) and, for the time being, overlap one another in the centre by the same amount.

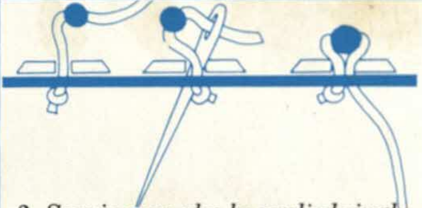
Glittering scarab motif makes a luxurious satin and velvet cushion.



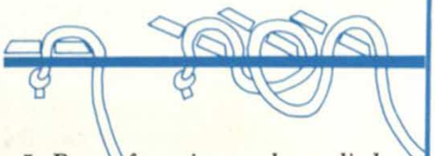
1. *Strings of sequins can be applied in this manner. It is not necessary to sew down every one as long as they are firmly secured in place.*



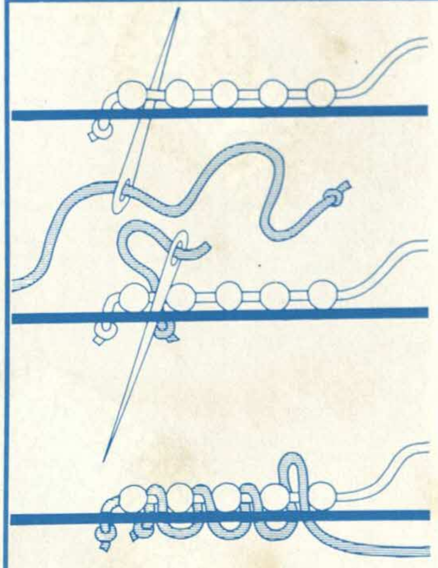
4. *To apply beads singly, thread one up after each stitch.*



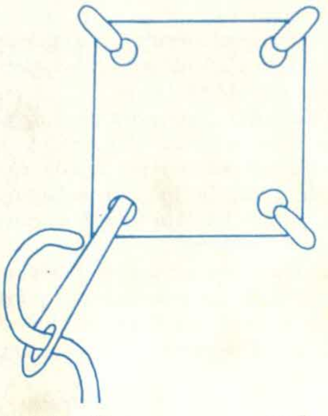
2. *Sequins can also be applied singly using a bead to hold each in place.*



5. *Rows of sequins can be applied one at a time using this method. Be sure each one overlaps the sequin before it by at least half, so that the centre hole is covered. When using side-hole sequins the same process is used but sequins can be overlapped less.*



3. *Bugles and other beads can be threaded up and then sewn on to fabric. Attach thread to fabric before stringing beads. Whether you stitch between each bead depends on the size of the beads you are using.*



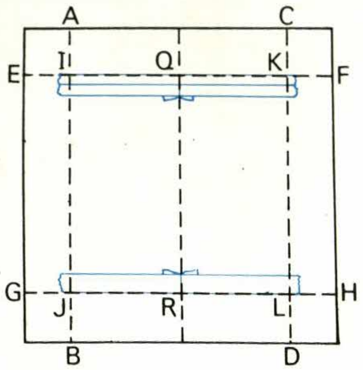
6. *Metallic squares are stitched at each corner.*

Jacqueline Short

☐ Tack or baste ribbons along outside border lines, leaving the edges raw as shown.

☐ At the centre line turn under raw edges for at least 5cm (2″) at the top and bottom of the design and slip stitch them together where they meet (fig.7). The remaining edges at the centre line can be cut to lay flat where they meet, leaving the edges raw since the beadwork will cover them. Tack in place.

☐ Now slip stitch all overlapping selvedges, stitching through to the canvas at the same time. This completes the ribboned surface.



7. *Diagram for applying ribbons.*

☐ Transfer the scarab motif (fig.8) on to tracing paper and baste the outline on to the ribbons, sewing through the tracing paper and taking care to centre the design first. Then pull the paper off, leaving the scarab outline stitched on the ribbons. You are now ready to begin embroidering.
Fig. 8 also shows the pattern of bead arrangement.

Applying the beads

To embroider the outline. Apply a length of 5mm ($\frac{1}{5}$") sequins round the outline of the body, using the method shown (fig.1), and a row of 5mm ($\frac{1}{5}$") sequins down the centre back and round the legs, as illustrated (fig.8).

Fill in the legs, except for the inner claws or 'thumbs', by tacking down lengths of sequins (fig.1) or by using a small rocaille to hold each sequin in place (fig.2).

☐ To complete the legs embroider the thumbs with small bugles or rocaille. You may string the bugles first and stitch down (fig.3) or you can apply each one individually (fig.4).

To work the head sew three rows of pearl oats across the front of the head (fig.4), tapering them slightly to make the outlined shape in the trace pattern, and sew another row of pearl oats down the centre back. Fill in the remaining area with bugles.

☐ Stitch two large black beads in place to form the eyes.

To work the back divide the upper and lower back (or 'chest' and 'abdomen') with two rows of pearl oats.

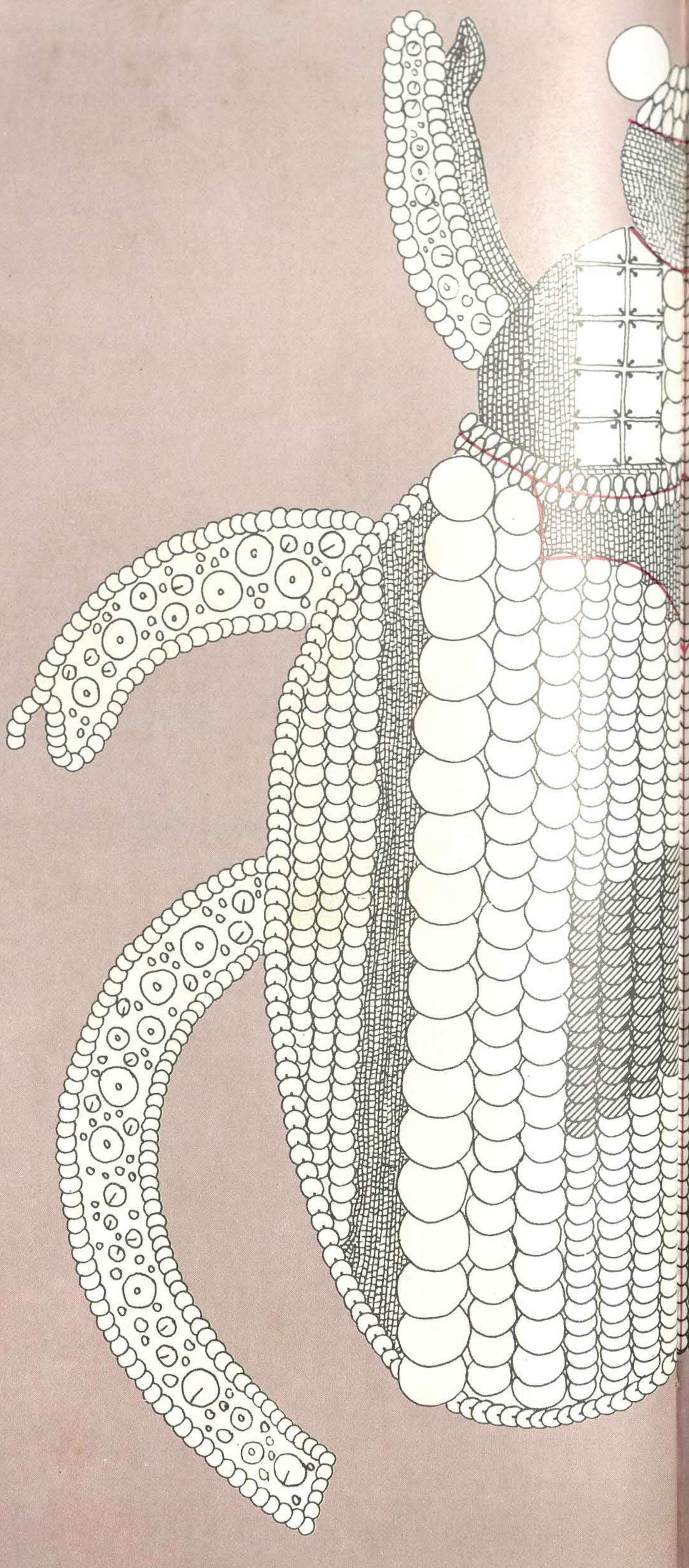
☐ To embroider the upper back begin with the row of 10mm ($\frac{3}{8}$") sequins on either side of the centre. Apply each sequin individually (fig.5), overlapping the next one by half its length to cover the hole.

☐ Fill in the remaining area with bugles and metallic squares. Some squares must be cut to fit the shape of the outline; all can be applied by the method shown (fig.6).

☐ To work the lower back begin by embroidering the wedge shape outlined in the trace pattern, using lengths of fine rocaille and stitching according to either fig. 3 or 4.

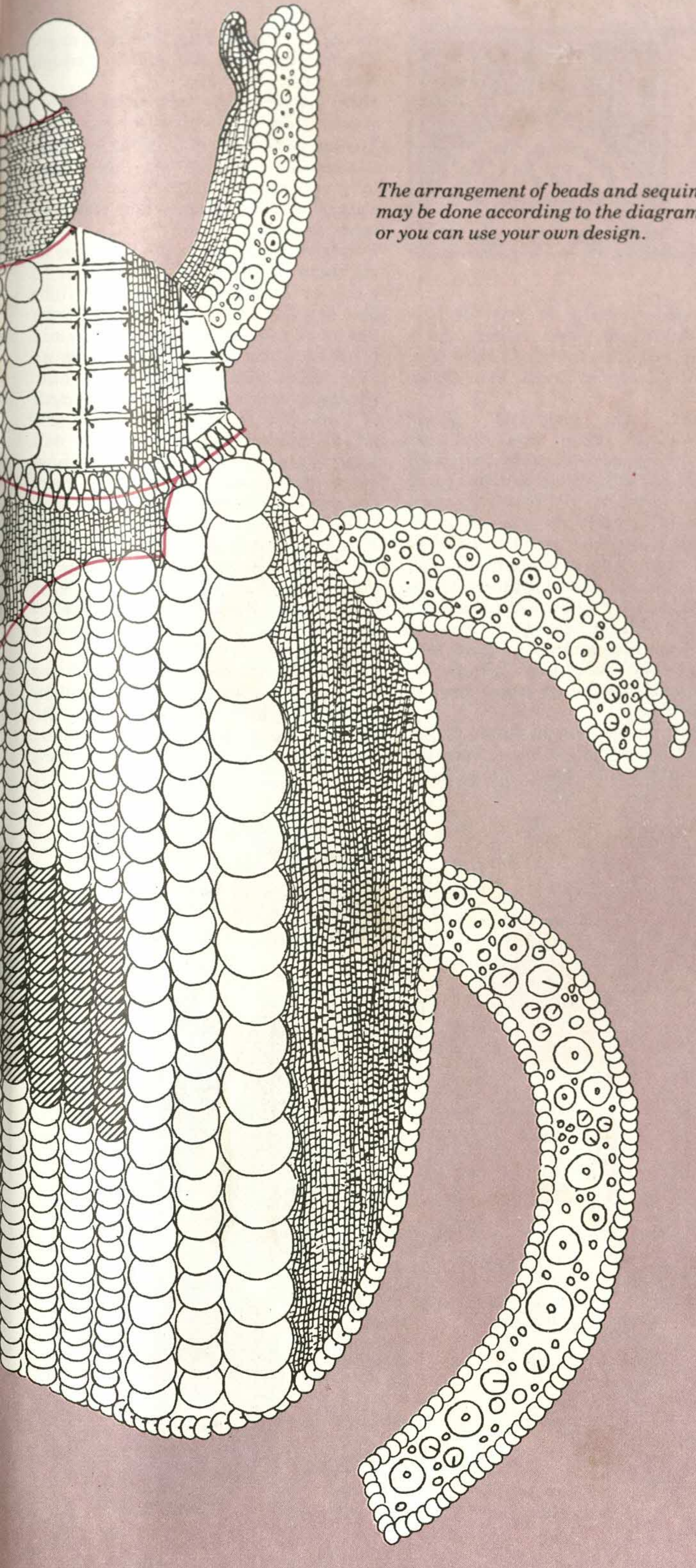
☐ The rest of the abdomen is embroidered with strips of sequins in 14mm ($\frac{9}{16}$"), 10mm ($\frac{3}{8}$") and 8mm ($\frac{5}{16}$"), plus two sections of bugles.

☐ Start with 14mm ($\frac{9}{16}$") side-hole sequins and apply singly, overlapping each about one-third. Work the two neighbouring rows of 10mm ($\frac{3}{8}$") sequins like those in the upper back and fill in the spaces left with 8mm ($\frac{5}{16}$") sequins and bugles, following the colour scheme.



8. *To make scarab trace pattern trace outline and additional pink guidelines.*

Jacqueline Short



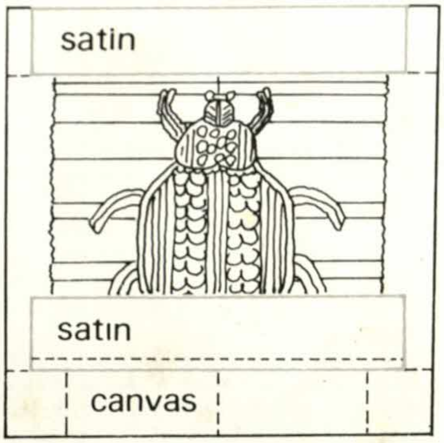
The arrangement of beads and sequins may be done according to the diagram or you can use your own design.

To assemble cushion

☐ Remove canvas from embroidery frame and cut out a square of satin the same size to make the back.

☐ Cut 4 satin strips 7.5cm (3") wide, 2 x 43cm (17") long and 2 x 36cm (14").

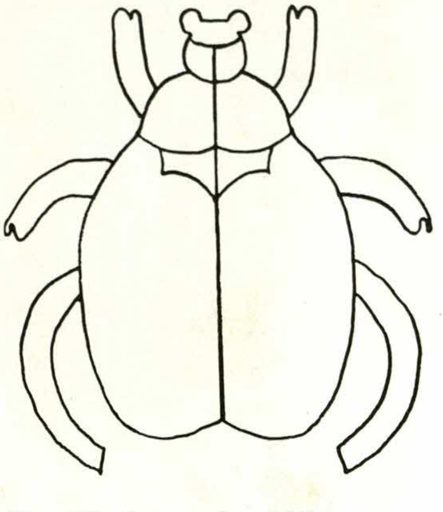
☐ Machine a 36cm (14") strip along the top and bottom edges of the canvas at the edge of the ribboned area, right sides facing, taking 13mm ($\frac{1}{2}$") seam allowance (fig.9).



9. *How to apply satin panels.*

☐ Press stitched satin back against canvas taking care not to harm beadwork and velvet ribbons. Tack edges of satin to edges of canvas.

☐ Apply side satin panels in the same way (fig.7, A to B and C to D) and join back and front of cushion by machine stitching on three sides, taking 13mm ($\frac{1}{2}$") seams. Turn right sides out and insert pad. Slip stitch side to close.



If you like the scarab motif then you might try this miniature version to decorate a lapel or handbag. Trace the pattern and embroider it in tiny rocaille beads in bright beetle hues. Embroider the motif directly on to the item or apply it first to net stretched on an embroidery hoop or to thin canvas.

Introduction to colour planning

Design know-how 12

Most people's experience of colour is usually emotional, based on associations which may be exhilarating, pleasurable or disturbing. For one person blue may evoke delightful early memories of summer skies and bluebell woods, for another it may be cold and bleak—the colour of ice, the sea, the harshness and cruelty of the elements. Combinations of colours may also be subjected to the same emotional responses.

But it's worth standing back a moment and considering colour as an objective reality which can be scientifically explained. A knowledge of colour theories—how various colours affect each other, and how their placement and depth affect overall composition and balance—will help you to create the effects you want.

In the next few chapters the various aspects of colour planning will be discussed more fully—a basis for your own experiments with colour and a fresh approach to the whole subject.

First of all—a few terms and definitions:

Primary. The brightest, purest colours—red, yellow and blue—are known as primary colours because they are unmixed with any others. By mixing primary colours in different proportions you can produce any other colour.

Secondary colours are a mixture of two primary colours to obtain orange, green and violet. Green is thought of as a primary colour by physicists working with rays of light. It can, however, be mixed from blue and yellow pigments. Primary and secondary colours together make up the six major hues in the spectrum.

Tertiary colours are mixtures of primary and secondary colours. They are yellow-green, blue-green, blue-violet, red-violet, red-orange, yellow-orange.

The following are the qualities which refer to any one colour:

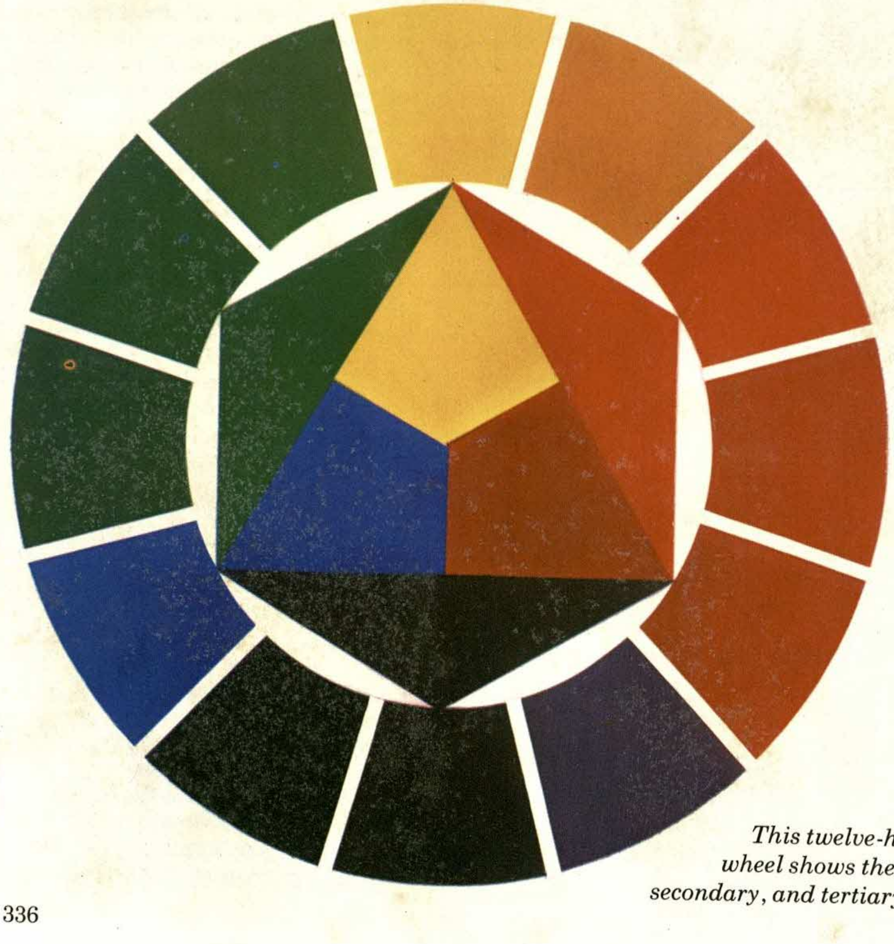
Hue distinguishes one colour from another—red from blue, for example. To change the hue of a colour we must mix another colour with it—blue added to green results in greenish-blue—a change of hue. Black, white and grey have no hue.

Tonal value refers to the lightness or darkness of a colour, its relation to white or black—for example, a light blue or a dark blue. In order to change the tonal value of a colour we can mix black or white with it and change its tonal value without changing its hue.

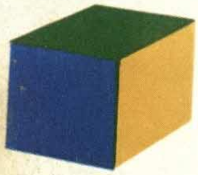
Intensity refers to the colour strength of a hue, the chromatic brilliance of a colour. Adding grey to any colour will lower its intensity according to how much grey is added. Of the primary colours red has the highest intensity, followed by yellow, then blue.

A colour wheel is a chart or scale of the whole spectrum of colours set in order around a circle. In principle, if two colours, diametrically opposite on the wheel (eg, yellow and violet), are mixed, the result will be grey.

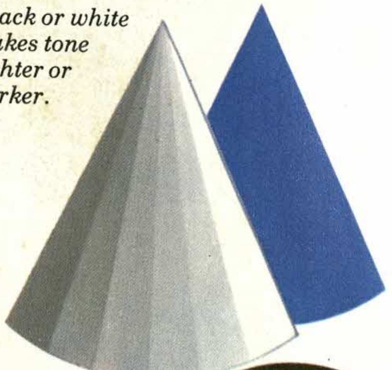
Twelve hues are represented which are sufficiently far apart to be distinguishable and which, together with the various tones and intensity scales, show a wide variety of colour which you can use in your craft work.



This twelve-hue colour wheel shows the primary, secondary, and tertiary colours.



Two primary hues together make a secondary hue.



Black or white makes tone lighter or darker.

Add grey and lower the intensity of a colour.

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